October 23–29 1987 Vol 6 No 42 60p

POPULAR Computing WEEKLY

Mega on the Amiga

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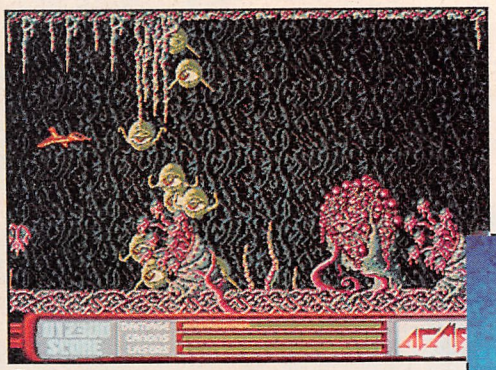
New releases, p. 35



Zynaps

NEWS DESK

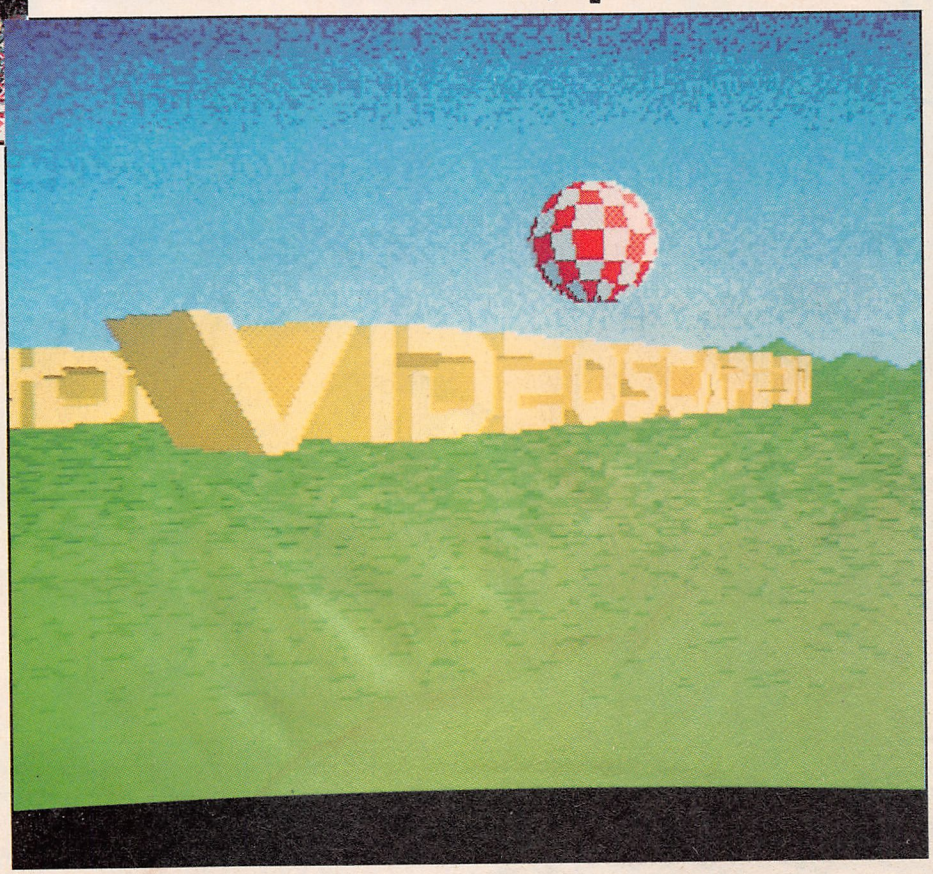
Ripper row

New Mirrorsofts

PROGRAMMING

Phoenix ends

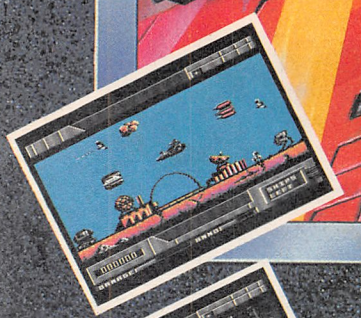
Garroch on scrolling

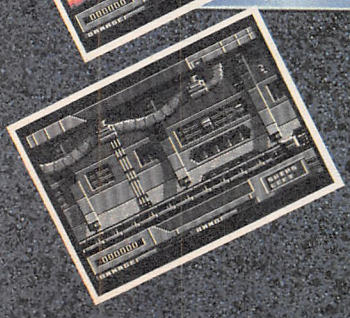


Videoscape

BE FAST...BE ALERT...OR BE DEAD!

R.I.S.K.





THE EDGE

I didn't expect to get a 'R.I.S.K.' order ... none of us ever does. I mean, Galactic Command doesn't call for a Rapid Intercept, Seek and Kill operative unless all else has failed ... but why do I get this feeling I'm gonna be on my own this time?

THE EDGE, 36/38 Southampton Street, London WC2E 7HE

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DISC 12.95

POPULAR Computing WEEKLY

October 23–29

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24 Listings goes back to a full eight pages. This week we reach the conclusion of the Spectrum programming series, *Phoenix*, part one of a *Mono Emulator* for the ST to get over those two-monitor problems, and finally the last part of the Amstrad DTP listing *Newsmaker*.

31 Bytes and Pieces Short routines for you to type in.

Top: Curly Watts. Second: Amiga 500. Above: Commodore 64. Below: Play It Again, Sam.

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33 New Releases Your complete guide to all the programs released this week, including the raunchy (?) *Passengers on the Wind 2* from Infogrames, *Enterprise* from Mastertronic and much more besides . . .

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© **Focus Magazine** 1987. ISSN 0265-0509

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Mirrorsoft shuffle

MIRRORSOFT is undergoing a minor reshuffle with the arrival of Tom Watson, formerly marketing manager at Firebird.

Rumours had been rife that he was stepping into Pat Britton's shoes but, having cornered her at the 1987 Desktop Publishing Show, she denied this.

"Up until now I have been marketing director and have been in charge of everything. Now we are producing so many products that the job needs to be split. Tom will be dealing primarily with advertising and exhibitions and myself with press relations."

So, is Tom Watson set to become Mirrorsoft's main marketing man? We will have to wait and see . . .

CRL in 'Ripper' row

A NEW 'Jack the Ripper'game may be the first to receive an 'X' certificate.

'Set for release by CRL next month, the game is based loosely on the actual killings of 1888. Whilst the graphics depict mutilation and crucifixion, it is, according to Nadia Singh at Headlines PR, 'essentially an adventure game'.

In last Friday's *Standard,* CRL's sales manager Greg Duffield was quoted as saying, "There is an image of a naked woman with her stomach gouged out and another picture of a woman being crucified."

Such images are understandably not suitable for children, which is why the game is likely to receive an X-cert. This is unlikely to prevent computer shops from selling the games to under 18's who are their biggest consumer group.

Singh conceded that inevitably children would see them but thought that it wasn't the brutality that was appealing.

New Mirrorsoft at DTP

THE torrential rain put many people off visiting the 1987 Desktop Publishing Show held last week.

You didn't miss much, though, as the exhibitions were aimed primarily at business users with fat wallets. All the big companies were there, including Apple, IBM and Rank Xerox.

Mirrorsoft used the show for the debut of a desktop publishing system for the Atari ST. This consists of Fleet Street Publisher vl.l on a Mega ST with the Atari SLM804 dedicated laser printer. With a 20Mb hard drive, the whole system will cost under £3300.

The show was also used by Apple to display Hypercard, a new range of Macintosh software. With Hypercard, it is claimed you can manipulate various types of information, such as video, animation and text, in a new way – by association and context. Now Macintoshes will have the Hypercard included in the system. If yours has not got one you can update it for £35.

What a discovery

DISCOVERY is a new arcade product from CRL offering thirteen games in one package.

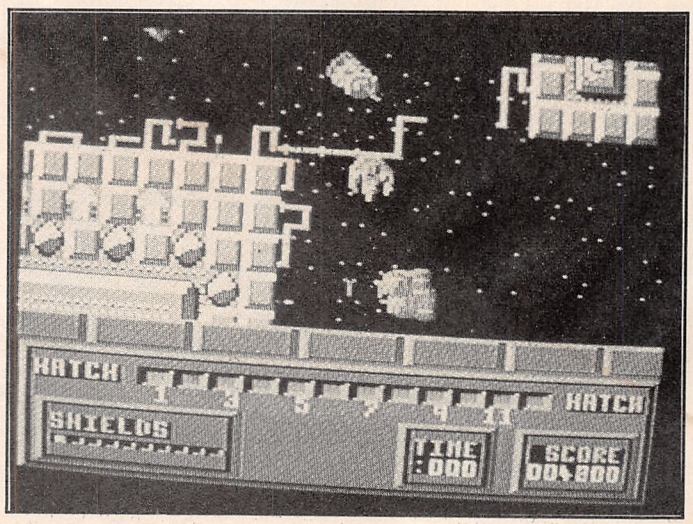
Whilst transforming the player into a daring fighter pilot, *Discovery* also incorporates various sub games to spice up the action.

The main plot involves an abandoned spaceship, death and illegal trading. Your mission as the pilot is merely to retrieve an unclaimed circuit board.

Simple, I hear you say. However in order to accomplish your task you must out battle the aliens guarding the ship and collect all the components of the circuit board.

To collect the components you must dock at numerous bays and complete a sub game before you can go on to the next port. These games have a diverse range of plots including shoot 'em ups, labyrinths and track racing. If you can crack them all you will have conquered *Discovery.*

Discovery, will be available on the C64 at £9.95 on cassette and £14.95 on disc. Amstrad and Spectrum versions are to follow.



Musical breakthrough

CHEETAH Marketing Ltd has produced a break-through music add-on for Commodore 64 users.

At just £49.95, the Midi interface will enable music to reach the ears of both serious and amateur musicians since it provides a service that was previously beyond many users' price range.

By using the Midi system, it is possible to control any compatible instrument from the computer keyboard.

Its features include amongst others full sync facility, midi delay facility, forward and reverse sequence playback.

Included in the package are software, instruction manual and Midi lead. This allows it to be plugged into the Commodore memory expansion port.

You can buy your Cheetah Midi Recording System from High Street stores, good computer shops or direct from Cheetah, telephone (0222) 555525.

Portable movement from Amstrad

FOLLOWING the news story (*Popular* 9–16 October) sources close to Amstrad have been making more comments about the new computer.

The original rumours, written about both in *Popular* and *Computer Trade Weekly* suggested that the machine would be launched in America at the Comdex Show next month. This now appears not to be the case, and in fact the machine will be launched at the Birmingham-based *Which Computer?* Show in February 1988.

The reason for this appears to be due to Alan Sugar's loud denials that such a machine will be launched. If the *Which Computer?* Show is chosen as the venue, it seems likely that it will be a very busy show for the boys from Brentwood, as it has been suggested that they may be launching a 80386 machine and a badged laser printer.

An Amstrad representative was not available to comment at time of press.

More Trap Door products

IF you are a fan of the *Trap Door* TV series, you will be pleased to know that you can now purchase various other *Trap Door* products, including a new *Trap Door* computer game from Pirhana, Macmillan.

This is the second game to be released – and it is hoped it will be as successful as its predecessor which reached the top ten last year.

The *Trap Door* TV show is currently broadcast on Saturday mornings as part of the Number 73 programme. This will finish in March but a new series is already set for later next year.

In the meantime, the memory of Berk and his friends will be kept alive by a vast array of *Trap Door* merchandise. Books, jigsaws, cards and a video are just a sample of the goods that will be available. For further information contact Link Licensing Ltd on 01-353 7305/6.

Mission impossible

The Stratton Air Terminal is a challenging new game from CRL.

Set in a futuristic world of super-technology, the game is about pitting your wits against the computerised 'Central Brain' after it has been damaged by a terrorist bomb.

Since the rescue services are cut off, your mission impossible is to rescue the survivors inside and shutdown the defence mechanisms activated by the explosion.

Your only way of achieving this is to remove all the circuit breakers located underground. The problem is you have no idea exactly where these are situated. Once you remove the last data bus, however, you will have achieved a total shutdown of the terminal and return a hero.

The Stratton Air Terminal will be available on the Commodore 64/128 – £9.95 on cassette and £14.95 on disc. It goes on sale in November.

Fame for Popular

MILLIONS of viewers were stunned last week by a nail-biting incident in Monday's edition of *Coronation Street.*

Curly Watts, played by actor Kevin Kennedy, held watching audiences agog for several minutes as he toyed in the newsagents with none other than *Popular Computing Weekly* and sister publication *Your Computer.*

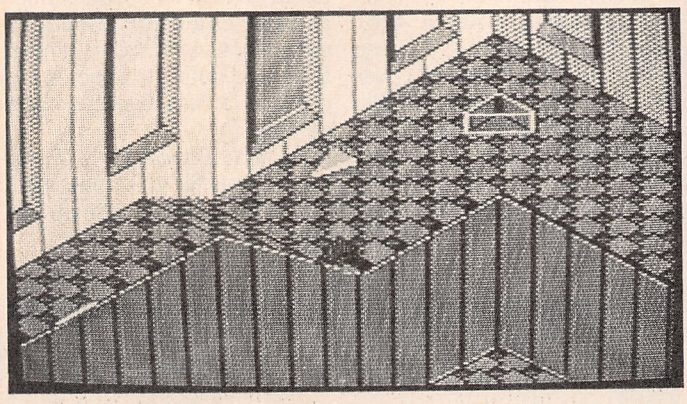
Watts was asking Mavis Riley (Thelma Barlow) which magazine she would choose. The tension broke as Curly dramatically chose – *Your Computer.*

"I was looking for something a touch more basic but these magazines always assume you've got a good grounding, don't they?" said Watts – a keen computer user in the series – after his decision.

Mavis Riley was understandably baffled by the computer press, as she said: "They assume you're a genius! I leafed through them this morning and I couldn't understand a word."

Granada TV press officer for *Coronation Street,* Leita Donn, admitted that the magazines were chosen on the advice of "people in the know", rather than the producers of the show personally.

Zig Zag Sputnik



ZIG ZAG is a new shoot 'em up from Mirrorsoft. Set in the 2000's, you are a trainee starpilot about to face the Matrix of Zog.

Created to separate the Starpilots from the total wimps, the Matrix of Zog is no easy challenge. But if you can overcome deadly aliens and negotiate energised catacombs and nearon puzzles, then you will be crowned Supreme Starpilot.

The release date for *Zig Zag* has not been finalised yet but Mirrorsoft are talking about late October or early November. It will retail at £8.95 on tape (£9.95 for C64) or £12.95 on disc).

New Midi book by Boom

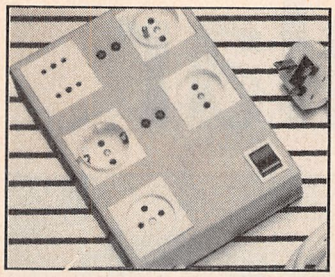
MUSIC Through Midi is a new book by Michael Boom aimed at anyone who is interested in electronic music.

Described as a comprehensive guide to the Midi system, the book covers various aspects of computer music including – an explanation of how the device sends messages, instructions for making Midi connections and an exploration of synthesizers.

In addition the book examines four actual Midi systems used in different environments. It also has extensive appendices which give details on Midi specifications, names of manufacturers and a glossary of Midi terms.

Music Through Midi is available from October 29th, priced at £17.95.

Continental adaptors



IF you have ever experienced the hassle of changing a continental plug or using an adaptor, then you will understand why Bowthorpe EMP have introduced a Common Market Socket Strip.

This six socket unit has been specifically designed for demonstrating or testing Continental equipment. The outlets, which are encased in white flame proof material, provide connection to French, German, Italian, Spanish and Greek plugs.

The unit is adaptable for wall or floor mounting, has an illuminated 'ON' switch and comes complete with a safety plug and 2m of cable. German and French versions are also being marketed.

The Common Market Socket Strip retails at £34.80 (plus VAT) and is available directly from Bowthorpe EMP Ltd, Stevenson Road, Brighton, East Sussex BN2 2DF.

ABC win Dixon's order

WITH Christmas only eight weeks away, ABC software have won a timely order with Dixons to supply its integrated business package.

The special Christmas promotion consists of Dixons' shops offering ABC as a standard bundled product with Amstrad 1512 PCs. In addition Dixons' business centres will sell ABC at its full retail price (£149) as a business software package.

Mike Loizou, assistant buyer for computers and electronics at Dixons, said that the package was the ideal solution for small business users since it starts from an accounting and book-keeping base with normal integrated functions thrown in. Other additional extras include stock control, calculator, electronic notepad, phone book, diary and alarm call.

With all these facilities, ABC Systems says it is the only package needed to run a small business effectively. They have also announced that the business package is available on 3.5" disc to run on the new IBM PS/2 computer, claiming this model is even more responsive.

Aegis offer

IF the Max Headroom Show had you glued to your TV then you might well be interested in an offer by American company – Aegis Development Inc.

Aegis has recently produced *AudioMaster,* a digital sound sampling and editing program for the Commodore Amiga. Pebber Brown, AudioMaster's project manager explained; "You can digitize someone's voice and by editing and splicing the waveform on the screen, make them sound like Max Headroom in just a few minutes."

According to the makers of *AudioMaster,* the list of its features is endless. Built-in oscillator to see the sound wave to check for distortion, special effects such as echo, reverse and low pass filtering to reduce distortion and internal resampling of a sound to make it compatible with other music programs.

AudioMaster works with any digital sound sampling hardware for the Amiga models. The amount of memory, however, will affect the sample length – two minutes for 512K but up to five minutes with eight megabytes of RAM.

So if you fancy yourself as the new Max Headroom, you can telephone Michelle Mehetrian in Los Angeles on (0101) (213) 392 9972. AudioMaster retails at $59.95 (about £36).

SOFTWARE HOTLINES

So, here we are writing Software Hotlines, the column that brings you the news, views, and general rubbish that we at the *Popular* offices get sent by the bucket-load from publicity-seeking software houses.

The star of this week's mail was unquestionably *Xarch* from **Superior Software,** the first game released for Archimedes. All I need now is an Archimedes to play it on . . .

The screenshot I have chosen to illustrate this week's Hotlines may look pretty uninspiring, but my moles at **Electronic Arts** assure me it is not. Called *Mini-Putt,* it is to golf what *Monty Python* is to the great bard.

Hazards include greens that eat the ball, something the Yankie Ryder Cup boys could have done with (ha ha)! Anyway, the game will be out for the Commodore 64 and IBM PC range some time in November.

Just in case you thought papers such as *The Sun* had a monopoly on the word Yuppie, **Domark** have managed to get it into their press release for *Trivial Pursuit* on the Atari ST (talking of *The Sun,* what's the difference between *The Sun* and *The Beano*? About 4p!!!). They think that the ST is the ultimately Yuppie machine (well they would!!), and that *Triv Pur* (as they call it in Sloane Square) is the perfect game to complement the ST. Much as I hate to say it, this is by far the best version of the game yet, and if you like quiz games then it's an essential purchase.

Whilst on the subject of 68000 based machines, **Paradox** software have released a game called *Grand Slam* for the Amiga. Programmed by a German company called **Infinity Software,** it purports to be the definitive tennis game, with representations of the big four Grand Slam championships (Wimbledon, Australia, France and U.S.).

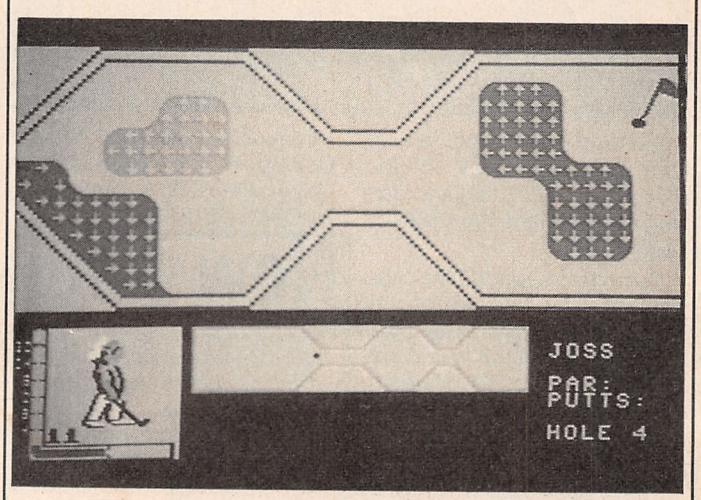
To me, each of the four championships seemed pretty similar (bar the obvious change in surface colour) and the game lacked the playability that still makes Psion's Game, set, and match for the Spectrum the best *Tennis* simulation ever!

Last piece of inside info for this week is about **Digital Integration.** This Camberley-based software house have announced details of the products that they intend to release towards the end of this year. The first, *Bobsleigh,* I saw at the PCW show, and if you're the kind of guy/gal who goes for simulations, then this will be right up your alley (me, I love 'em!!!).

Based on times spent with the British bobsleigh team, and in particular Nick Phipps, it should be out in mid-November.

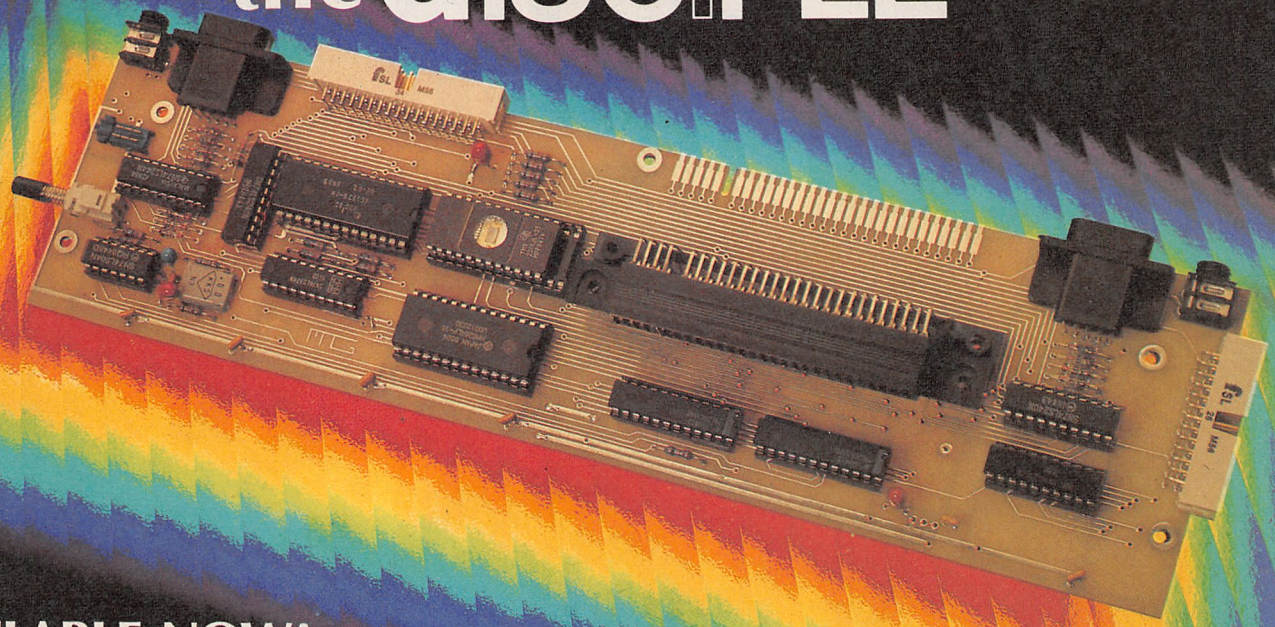
The other game that **DI** have up their sleeves is more of a departure for them. *ATF* is short for *Advanced Tactical Fighter* and it takes a great deal of **DI**'s experience with flight simulations, and puts it to good use to produce a hair raising arcade game.

As with *Bobsleigh, ATF* will be available for most machines, this time probably early in 1988.



The answer to the Spectrum-users prayer

the DISCIPLE



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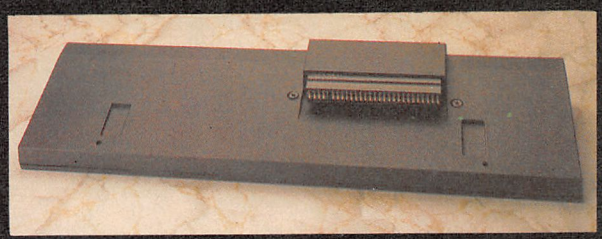

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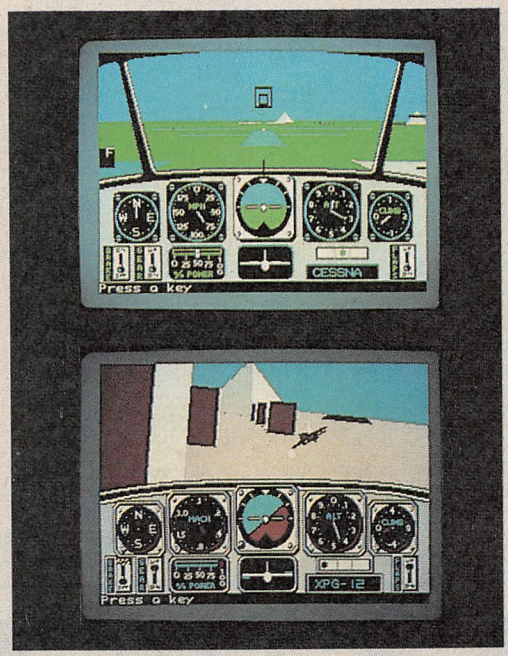

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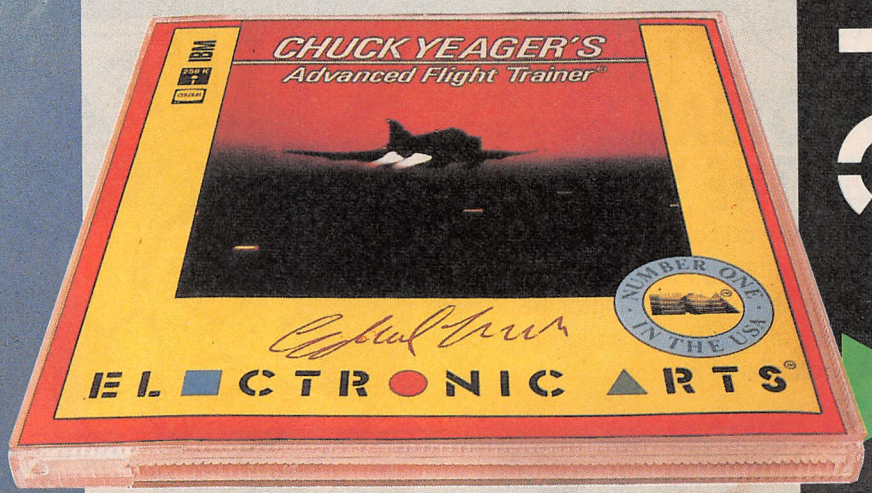

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Commodore Amiga Hardware

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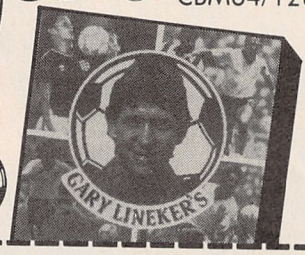

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Narrow minded

The letter from Andy Smith titled Risky Business was narrow minded and offensive.

The reason it was offensive is because of the attack on Sir Clive Sinclair. The writer admitted he had not completely grasped the idea of RISC and CISC, while he attacked the comments of a man that did. Which was narrow minded.

If Sir Clive had not pioneered the world market with British computers there probably would have been no Acorn computers to create this Archimedes.

Because of this brilliant man we have computers like the ZX80, ZX81, ZX-Spectrum, and quite a few spin-off computer companies, ie Acorn and failed developers of the Jupiter Ace.

He produced the flat screen TV and the C5. The C5 was a good idea if the roads were suitable for it. Now he has produced the Z88 which is going to knock the competition for six. These American and Japanese computer companies would have had a stranglehold on the UK markets if it were not for pioneering British companies.

This market is the present and future of the world. If you're not in the race you will become over a period of time a second, third, fourth etc . . . , rate country, although we are probably a third rate computer producing country. Amstrad produce computers in Korea, Acorn are Olivetti owned, Z88 supertwist screen is produced in Japan (a British invention which the inventor gets no royalties from).

Mr M Gendon
Mile Cross
Norwich

Mr Smith's letter was pure opinion and as such it was entirely justified.

Your letter represents a legitimate view of Sir Clive Sinclair as innovator. Rather more open to question is your implicit admiration for Sinclair as successful entrepreneur and businessman, and this is a particular aspect of Sinclair's public image which Andy Smith set out to attack in his letter.

The Sinclair story is unfortunately a story of an intelligent scientist with not always very good ideas when it comes to bringing his technology to market. There have been ongoing disagreements among the staff of *Popular Computing Weekly* over this – the fact is that there are elements of truth in the opinions of yourself and Andy Smith.

Sinister ring

I fear the worst. The words "due to overwhelming demand" have a false and sinister ring. Demand by whom? Certainly not by me, a pensioner of 73 who took to computers on retirement and for whom one of the highlights in a fairly dull existence is the weekly appearance of your puzzle.

Your magazine has less relevance to me today than when I first bought it in 1983. Then it was friendly and helpful. Now it is slick and more sophisticated but has less to offer.

The puzzle is the one item that has sustained my interest. Now you seek a new 'format'. "How can a puzzle fit into a new format?" I ask myself.

The successful computer puzzle requires logical thought, a certain mathematical expertise and an adequate knowledge of his or her machine on the part of the customer.

To maintain interest week after week requires ingenuity and variety from the author.

To achieve variety he needs flexibility and that does not accord with a rigid format. Apart from some repetitiousness your puzzle does already satisfy these criteria and I would suggest that you double the salary of your compiler, double the space available to him and produce two puzzles each week . . . one advanced and an easier one for beginners.

George Godman
Tewkesbury, Gloucs

Hmm. Please believe us, there has been a demand for a new puzzle for some time, and so we thought it logical to refer to our readers on the matter.

As for you suggestions, we have not ruled out the possible return of our original puzzle. If only we could raise our compiler's salary . . .

Basic facts

After Duncan Evans' article on BASICs in Vol 6 No 38 and Mr Osmond's letter in Vol 6 No 40 I feel I must put the record straight concerning HiSoft BASIC on the Atari ST:

1. The interactive editor works in all screen resolutions and has horizontal scrolling.

2. There is no disc access when using the extendable library features of the package so that compilation to memory takes place without a disc access at roughly 1700 lines per minute.

3. HiSoft BASIC is not simply a compiler for the Atari ST BASIC; it is an implementation of Microsoft QuickBASIC (version 3 on the PC) and as such not only brings the power of an industry-standard BASIC to the ST but also allows the same program to be developed on both the PC and ST with minimal changes.

There are many commercial programs already written in HiSoft BASIC because they exist as QuickBASIC (or Turbo BASIC) programs on the PC e.g. CDS in Swansea converted their accounting suite from the PC to the ST with very few changes using HiSoft BASIC while CP Software moved their Bridge Tutor across with no modifications at all! Two programs written specifically for the ST with HiSoft BASIC are ST Replay ver. 4 from 2-bit Systems (distributed by Microdeal & Michtron) and Voice Master by Soundbit Software (Syndromic Music & Hybrid Arts), both highly graphical and complex packages.

The above indicates the power and usefulness of HiSoft BASIC and I hope that it will go some way to clearing up the confusion that must have existed in your readers' minds after Mr Evans's review.

David Link,
Prop, HiSoft
Bedford

Spoilt for choice

I am hoping to upgrade my present system, a Spectrum +2, to either an Atari 520 STFM plus monitor or an Amiga A500 to use on a TV. Could you advise me which is the best computer for me? What I want it for is some word processing, programming (Basic and later 68000 code), graphics and, of course, games.

Simon O'Hara,
Padstow

On purely technical details the Amiga is the better buy, but the ST has a much bigger software base.

We get results!

Earlier this year you published a letter from a reader complaining of difficulties in obtaining the program *Wordfinder* from WD Software in Jersey. You may therefore be pleased to hear that the program is now being distributed by Bradway Software at 33 Conalan Avenue, Sheffield. Versions are available for Spectrum, Amstrad, BBC and Z88 machines.

It's encouraging to see that your letters page produces results.

Dr P R Scott
Godalming

What a saint!

Congratulations on the recent article on ST BASICS, with the comparison chart, etc, EXCELLENT!!

This is the stuff we potential customers need to see, not just biased reviews emphasising only the good points of a product.

On the same note, how about similar articles in the future covering such things as graphics programs (Degas, etc)? For instance, I'd be interested to know which ones allowed pictures to be used within my own programs, for use in adventures, etc.

Incidentally, why are ST magazines so expensive (£1.50+). Your own mag (*ST Update*) is fine, but why the extra cost when similar mags for other machines can turn out news and articles for around £1.00?

It gives the impression that publishers are taking advantage of the ST's recent popularity.

Peter Godley
Worksop, Notts

As if – Ed.

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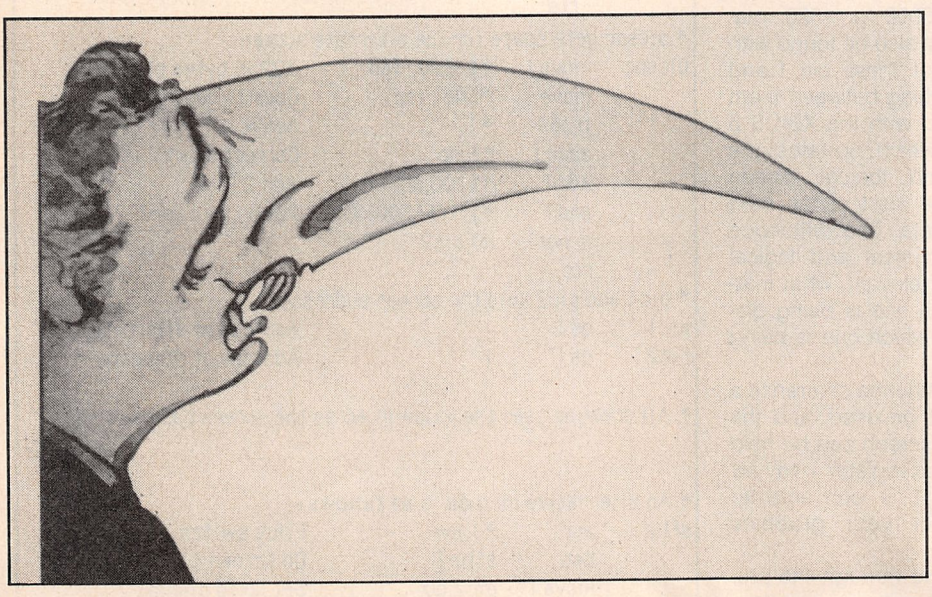
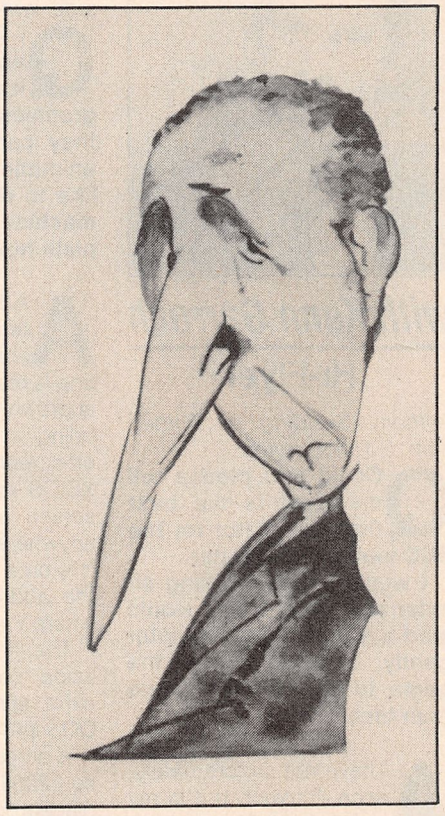


The questions are as follows:

1) What was Jim Hacker's job before he became Prime Minister?

2) Name the actors who play Hacker, Sir Humphrey and Bernard.

3) What is Sir Humphrey's full official title?



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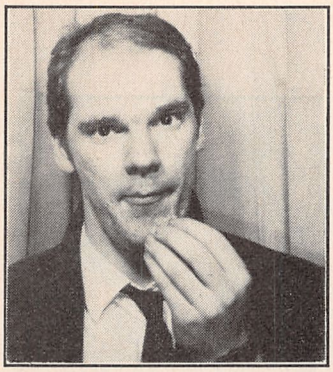


with Kenn Garroch

Hi-Flyer

Anthony Skelding of Rotherham, S Yorks, writes:

Q Could you please tell me what is the best flight simulator for the BBC model B computer.

I would like something similar to *Acrojet* which would lead me into flight simulator gently. I would prefer the game to be on disk rather than tape.

A I have not, unfortunately, seen *Acroject,* but in my opinion, *Aviator* from Acornsoft, is the best flight simulator for the BBC. It is fast, responsive, and great fun. This is, I hasten to add, only my opinion.

Click off

John Kane, of Colchester, Essex, writes:

Q I have just started to write programs in machine code and have been accessing the sound chip. The trouble is that every time I press a key I get a click and the sound chip registers get reset. Is there any easy way of turning the key click off from within a machine code program?

A The answer to this one is – it's easy. Just go into supervisor mode and use the following:

and.b #254,$484

to turn then bell off as well use

and.b #250,$484

The bits in #484 are the attributes for the console

Bit 0 is the keyclick – 0 is off

Bit 1 is the key repeat

Bit 2 is the bell i.e. ctrl G

Be sure to access these in supervisor mode only, since they are in a protected section of the memory.

ST-animations

S Stevens, of Hull, N Humberside, writes:

Q I have read, in books about computer graphics, about buffered graphics screens and how they can be used to make animation smoother. I would like to do this on the ST, in machine code, could you explain how?

A A buffered graphics system is where two screens are used for the display, one is displayed while the other is drawn upon. The switch over being when the video scan is off-screen. On the ST there is an XBIOS routine that allows the screen to be placed virtually anywhere in memory as long as it is on a 256 byte boundary ie, the address can be xxxxxx00 where x is any hex digit.

The first thing to do is set aside some memory for the extra screen using the GEMDOS $48 call.

A screen is 32000 bytes long so 32256 is reserved and then placed on a page boundary by adding 256 to the start address and ANDing this with $FFFFFF00 (think about it).

The start of the normal screen ($78000 on 520 machines) must also be found with XBIOS 2. Call these pic 1 and pic 2. Switching between them is performed with the XBIOS 5 command which updates the physical and logical screen starts at the start of the next screen update. The difference between physical and logical screens is irrelevant, what matters is which one is being displayed and which one is being worked on.

To determine the difference a switch must be used, and the start of the screen can be held in an address register – say a6 – so that it is conveniently available for your graphics routines.

Every cycle through the program simply call sflip and then wvbl. The latter routine makes sure that the screens have been flipped before they are accessed since it waits for a video blank to occur.

Remember to reset the screen pointer to the standard screen position when you exit the program otherwise the machine will probably go kaput (crunch only). The following list shows the necessary routines:

```
swi     dc.w    0       Switch variable
* sflip switches between screens using system calls
* use once every program cycle followed by a wvbl
sflip   eor     #1,swi  Switch it i.e. 1 to 0 ot 0 to 1
        beq     sflip1
        move    #-1,-(sp)           Keep current resolution
        move.l  pic2,-(sp)          Phys screen now 2
        move.l  pic2,-(sp)          Log screen now 2
        move.l  pic1,a6             Draw on this
        move    5,-(sp)             Set screen code
        trap    #14                 Go XBIOS
        add.l   #12,sp              Correct stack pointer
        rts
sflip1  move    #-1,-(sp)           As above
        move.l  pic1,-(sp)          Screen 1
        move.l  pic1-(sp)           Screen 1
        move.l  pic1,a6             Draw on this
        move    #5,-(sp)            Code
        trap    #14                 Doit
        add.l   #12,sp
        rts
* wvbl wait for a vid blank to occur, use after sflip
wvbl    move    #37,-(sp)           Video blank READY!!!
        trap    #14                 Wait for it...
        addq.l  #2,sp               correct stack
        rts                         GO!!!


* The setup routines are:
* getscr finds the position of the standard screen
getscr  move    #2,-(sp)            Get current screen start
        trap    #14                 Go XBIOS
        addq.l  #2,sp               Correct stack
        move.l  d0,pic1             Store address in pic1
        rts
* picspc gets space for the alternate screen
picspc  move.l  #$7E00,-(sp)        32256 bytes please
        move    #$48,-(sp)          Code to get space
        trap    #1                  Get it
        addq.l  #6,sp               Correct stack
        add.l   #$100,d0            Add 256
        and.l   #$FFFFFF00,d0       Put on boundary
        move.l  d0,pic2
        rts
* pic1 and pic2 hold the screen addresses
pic1    ds.l    1                   Address of alternate
pic2    ds.l    1                   Address of standard

* All drawing uses the value in A6 as the screen base address


* An alternative method is as follows
sflip   eor     #1,swi              Flick switch
        beq     sflip1              Do screen 1
        move.l  pic2,d0             Set up to display 2
        move.l  pic1,a6             1 for graphics
        grap    sflipg              Jump to it
sflip1  move.l  pic1,d0             1 for display
        move.l  pic2,a6             2 for graphics
sflipg  lsr.l   #8,d0               Get middle 8 bits of address
        move.b  d0,$FF8203          To screen mem pos low
        lsr.l   #8,d0               Then high 8
        move.b  d0,$FF8201          To screen mem pos high
        move.l  $466,d0             Read the number of VBLs
vblw    cmp.l   $466,d0             And wait for it to change
        beq     vblw                And wait
        rts                         OK all done...much easier eh?
```

Spaced out

Julian Ellis, of Crosby, Liverpool, writes:

Q I would be grateful if you could help me with the following problems on the Tatung Einstein computer.

I am writing a wordprocessor in Basic and the book says that the ASCII symbol for the delete key is 255. When I try using this code it gives the same result as the space bar. Can you tell me a way of getting around this?

A The first point I must make is that I am no expert on the Einstein – however, the problem with the delete character may be as follows:

ASCII codes on computers fall into two main categories, printable and un-printable.

The latter form control codes such as clear screen, move the cursor up and down, etc.

In standard ASCII 0–31 are control codes, 32–127 are printable characters, and 128–255 are undefined since ASCII only uses 7 bits (seven bits is 2^7–128 so 0–127 is 128 characters). However, most computers use 8 bit ASCII giving 128 extra characters.

DEL is usually defined as code 127 but is not normally a printable character – it depends on the computer.

When the computer sees 127 (or 255 in this case), it interprets it as delete by backspacing the cursor and removing the last character which actually takes three codes ie, backspace, space, and backspace.

The trouble arises because the interpretation is only done for input from the keyboard to the editor. Printing the delete character on the screen simply gives a space, since it is not defined (check out user defined characters to see if you can give it a shape).

The solution is to check all keyboard input and interpret the values you place on the screen according to what you actually want to happen.

Hopefully, the Einstein interprets the standard cursor movements 8, 9, 10, 11 and 12 as backspace, forward space (tab), down (line feed), up (reverse line feed), and clear screen (form feed).

With all of these you should be able to do virtually anything with the cursor – they may be different numbers on the Einstein, check with the manual.

Bust up

H Smart, of Selkirk, Scotland, writes:

Q In the copy of *Popular Computing Weekly* Vol. 6 Issue No. 36 dated 11–17 Sept, there was an Article "Repair or Bust".

In it there was a program to test the RAM. I presume that line 2010 was intended to be

```
IF PEEK I=0 THEN GOTO
2500
```

and line 2020

```
IF PEEK I=255 THEN GOTO
2500
```

(The equals sign was missing in the article)

I typed the program into my Spectrum and got the report "Error in socket".

Does this mean I will have to get my Spectum repaired as it seems to work OK. If I obtained the chip, could I change it myself? If so, which chip is it and how do I find chip 7?

A *Don't panic* – there is absolutely nothing wrong with your Spectrum, the fault is with the program.

What seems to have happened is that the listing was misprinted (probably due to the magazine changing hands and things being done in a bit of a rush). In any case, it should have read:

```
2000 CLEAR 32000
2010 FOR I=32767 TO
65535:POKE I,0:IF PEEK
I<>255 THEN GOTO 2500
2020 POKE I,255:IF PEEK
I<>255 THEN GOTO 2500
2030 NEXT I
2040 PRINT "RAM
OK":STOP
2500 PRINT "RAM ERROR IN
SOCKET";(INT((I–65535)/
2048))
```

All the program does is goes through the RAM byte by byte to see whether it works properly. It does this by first writing a zero and then reading it back to see if it is still zero. To double check, 255 is written to the location and then checked to see if it is still there. If both these work then the memory location is working correctly.

As far as knowing which RAM chip is number 7 (or number for that matter), I'm afraid that your guess is as good as mine. I'm not sure who wrote the article but they should have included a diagram (perhaps there was not enough space?). In practice, the RAM test program is fairly redundant since RAM failure on the Spectrum will usually cause the machine to crash as it is powered up.

Cumana buy me

Ron Collins of Worthing, West Sussex, writes:

Q I am thinking of buying a CS400 Cumana disk drive for my ST (80/40 with PSU). Could you tell me:

a) How do I connect my 520 STFM to it?

b) is it 100% compatible (Drive + file type)?

c) is it legal to transfer my original 3.5″ disk software to 5.25″ format?

I am doing this to save money on disks and to be able to load IBM text files.

A As far as I know, the CS400 is not compatible with the ST, it is sold as a BBC compatible type.

The ST's interface is a little different to this and you will need one of the widely advertised 1 meg 5.25″ single or double drive systems that are compatible (June issue *ST Update*).

Cumana manufactures these as well so they obviously provide the interface which simply plugs into the external drive socket of the ST.

As long as the connection is correct, and it won't work if it's not, any drive you connect to the ST will be 100% compatible with the operating system but will remain as drive B so you cannot boot from it.

As long as you are making only protective copies of your software, there should be no problems about the legal aspect of things.

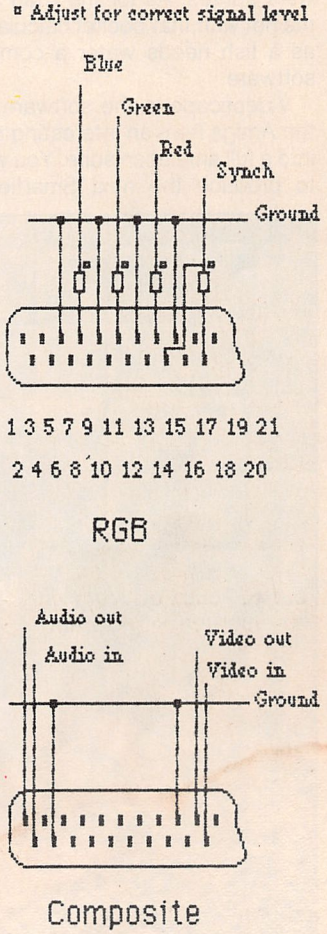
Socket to me

T O Tran, of London, writes:

Q Here are the details of the SCART connector you require (Popular 11–17 Sept).

Pin	Connexion
1	Audio out right channel
2	Audio in right channel
3	Audio out left
4	Audio ground
5	Blue ground
6	Audio in left
7	Blue in
8	Source switching
9	Green ground
10	Data
11	Green in
12	Data
13	Red ground
14	Data ground
15	Red in
16	Fast video blanking
17	Comp vid ground
18	Fast vid blank ground
19	Comp vid in
20	comp vid in

The following diagrams show the connections to the monitor plug.



A Thanks to Mr Tran and all the other readers who have sent me details, hopefully this solves the problem.

Paint your wagon

Ian Rook looks at a tool which turns the Amiga into a graphics engine to shame the Quantel paintbox.

The Amiga is a computer with stunning capabilities. No-one has yet stretched the machine. There are some things that no other home computer can do half as well as the Amiga. Notably graphic animation.

Even the Archimedes doesn't offer hardware sprites. As for the Atari ST – trouble me not with that pocket calculator stuff. But as a fish needs water a computer needs software.

Videoscape is the software which turns the Amiga from an interesting graphics tool into a full animation suite. You won't be able to produce the next Smarties advertisement, but you could have a bash.

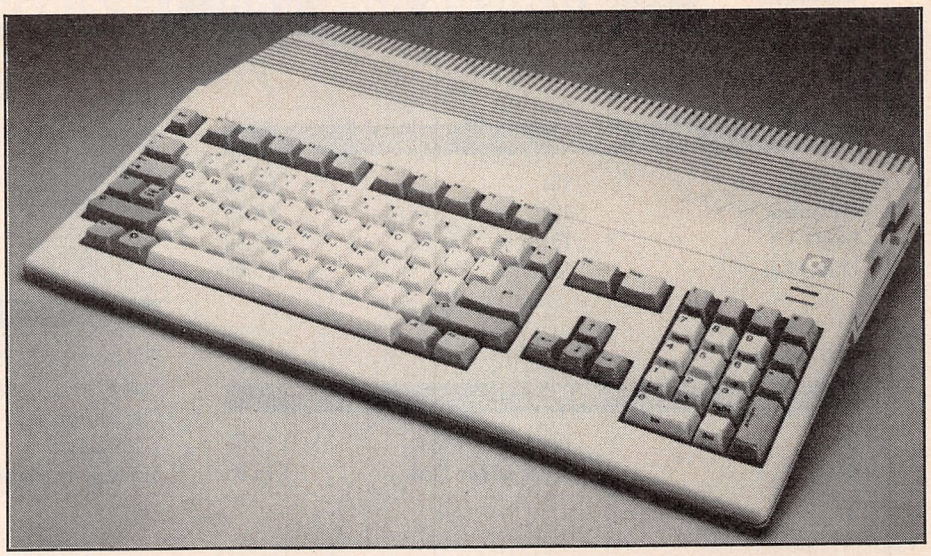
Designing shapes with Videoscape is complicated:

- A simple triangle has three points, each with two co-ordinates.
- A four-sided pyramid has five points, each with three co-ordinates.
- The edges are what matter for sorting out the shading.
- A triangle only has three edges and the pyramid has eight.
- All the vertices have to be defined.
- Then colours have to be specific for each enclosed triangle.
- The flat shapes are called polygons.
- The program insists that each polygon is flat – the x, y or z co-ordinate must remain common.
- But the shape can have up to 24 vertices.
- For simplicity it is best to make each polygon a triangle, since this ensures that the shape is flat.

Moving experience

Objects do not stay still. They can move in 3D space. Aviation terms have been borrowed to try and clarify the meaning of different movements. Pitch denotes a change in the y, bank in the x and heading in the z orientations. A movement script needs to be worked out and written with a firm grasp of what is going on. Things get even more complicated when the viewer starts to move independently of the object. If your aeroplane is flying one way and you move another then keeping the shape in view is very difficult. Add to this the option to metamorphose shapes – ideal for the flapping wings of a bird for instance and it all becomes very complicated. The package comes with a fold-out strip of cardboard to remind you which direction is which. I initially scoffed at this and then had

to excavate it from under a pile of disks in the middle of quite a simple exercise. The manual suggests using graph paper, model 'planes and a matchbox as a camera so that you can work out what is going on. This advice is second only to the recommendation that you don't let anyone catch you behaving in such a way. A compromise has been made in only allowing one light source and that is limited to one intensity. The lack of shadows is slightly unreal but the lighting which is used makes the shapes look convincingly solid.



Strings of numbers

All this work is carried out by defining points. Typing in strings of numbers with all the visual appeal of a Simon Goodwin listing in Popular. De-bugging a shape is tiresome. You can see that something has gone wrong instantly but finding it and putting it right is a laborious task. All the shapes need to be defined with an ascii text editor. I used both Word Perfect and ED, the standard Amiga editor. Despite the undoubted power of Word Perfect I found the need to hop between the editor and videoscape meant that I preferred to use ED, WordPerfect taking too long to boot. With more RAM I could fit both packages in at once and multi-task.

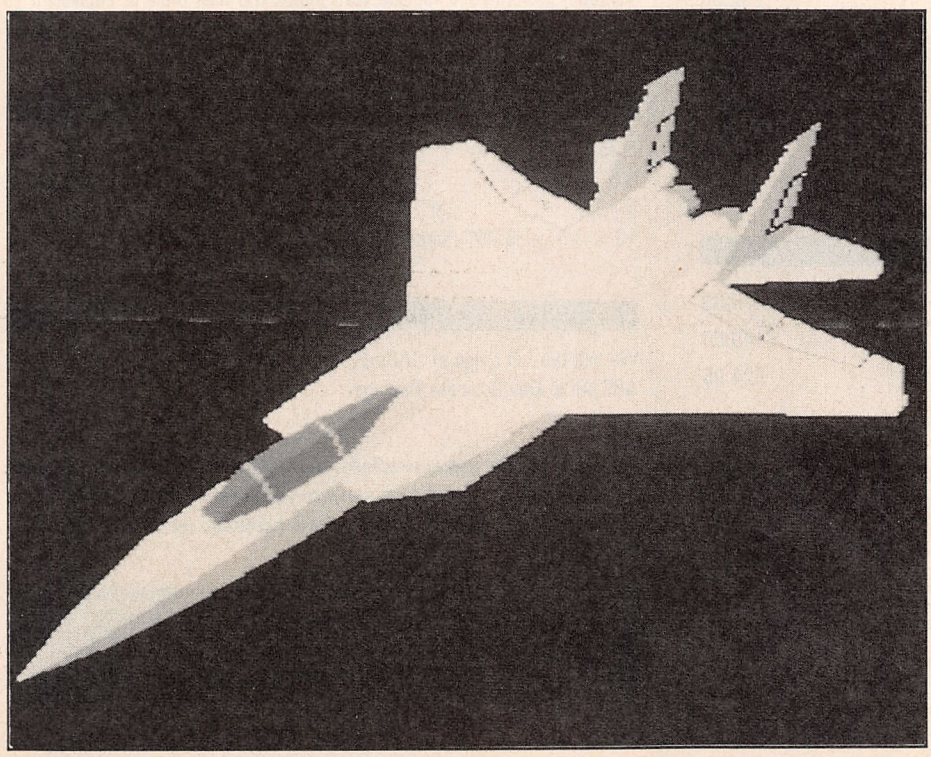
Ram hungry Videoscape will run on a minimum A500 configuration of a single drive and 512K, but a second drive makes it easier to add and store objects. Videoscape will make use of up to 4.5Mb, 1Mb being necessary if you want to run a full animation in RAM. EGG and OCT are two separate programs which cut down the effort required to generate a shape. EGG stands for Easy Graphic Generator.

It is a library of simple shapes, like cones and spheres. These form building blocks for more complicated shapes. I'd have liked the ability to add more shapes to this but as it stands EGG is a timesaver.

OCT stands for Object Construction Tool. It allows you to take a number of shapes and join them together.

The use of EGG and your own mathematical edifices, combined by OCT speeds up Videoscape despite being a brain twisting experience.

"There is a lot of work involved, but then Hollywood wasn't built in a day."



Conclusion

Videoscape is a messy program to use. There are several programs, each with a different idea of what the user wants.

They take a very long time to get to grips with and the price is way over the top.

The bad program design is a result of the way in which the package was developed. Allen Hastings put together some routines for his own use.

He wrote and recorded onto video a couple of 30-second animations. Being justifiably proud of his creations he took them to the local Amiga user group (FAUG – the First Amiga User Group in Palo Alto, California).

The response was overwhelming and he was invited to the Amiga developers conference in Monteray.

There the demos met with spontaneous applause and a contract from Aegis.

Yes Videoscape is clever but if it had been designed to be marketed from the outset the result would have been neater. This does not detract from what you can do with the package. This is to computer graphics what the Amstrad PCW 8256 is to wordprocessors. A little rough around the edges, but at a price which means people can actually afford to buy a system.

Paintbox

Many Universities and polytechnics teach computer graphics but with a Quantel Paintbox costing £150 per hour and image recorders tens of thousands of pounds, practicing is not affordable.

The home user may find it difficult to justify this as anything more than an expensive video-titling system, after all if Channel 4's "The Chart Show" can make do with one set of animated headphones and the Amiga operating system windows then do you need to get much more sophisticated for home movies?

Probably not, but "The Chart Show" underuses the Amiga and there is a terrific buzz to be gained from producing a good animation. There is a lot of work involved but then Hollywood wasn't built in a day.

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Scroll on

In the fourth part of this indispensable series, Ken Garroch continues with his expert explanations and details of screen scrolling and copying.

A popular graphics technique used on many computers is scrolling the screen either vertically or horizontally or both. This can be done in a number of ways depending on the capabilities of the machine. On some it is quite difficult to achieve a reasonable speed since the whole thing has to be done through software, others allow the screen to be positioned via the hardware. The most obvious example is the Commodore 64 where the VIC chip has a couple of registers that define the screen's horizontal and vertical positions. The Amiga is even better in that a section of memory can be mapped directly onto the display.

The most obvious way of scrolling the screen is to lay out the screen in memory as though it were a continuous field (see Fig 1) and then simply copy the required section into the display area. One of the main drawbacks is that with large screens, the time taken to copy the required section can be considerable in terms of the number of instructions that the processor must execute to do the job. There are a couple of ways around this, the simplest being to use a section of the screen instead of all of it. The main thing to make sure of when copying large chunks of memory around is that the fastest possible method is used.

When using a hardware scroll the position of the screen can usually be specified as 7 pixels ie, a register holds a number from 0–7 that specifies the screen position with 8 being the same as zero. This means that every eighth move, a new section of screen must be copied from memory. The speed and technique of the copy depends on the processor type as much as the screen layout.

At first sight, it seems that a simple loop will perform the copy. However, the screen is usually made up of a number of lines so to make the scroll continuous the remainder of the line left in memory must be skipped before going on to the next.

This is simply done by adding a certain amount to the pointer at the end of each screen row. Since lines are always of the same length, this works for each one. The thing to note is that the routine is now split into two loops, the inner one copies a section of the line depending on the scroll position, and the outer one repeats the inner for the number of lines to be copied.

To make the inner loop as fast as possible, it is usually best not to use a loop at all, it is faster to repeat the instructions although this does make the program longer eg,

```
COPY  LOAD  NLINES,REG1   Get the counter for the
                          no. of lines copied
OULP  LOAD  NBYTES,REG2   Counter for number of
                          bytes per line
INLP  MOVE  SRCE,DEST     Copy a byte from
                          source to destination

INC     SRCE              Increment the pointer to source
INC     DEST              Same for the destination
DECNZ   REG2,INLP         Decrement reg 2 and loop until
                          zero
ADD     #FSET,SRCE        Skip the remainder of the line
DECNZ   REG1,OULP         Dec reg 2 and loop until zero
```

Although this seems to be a compact routine, it is faster if the inner loop is replaced by a series of MOVE SRCE,DEST eg,

```
MOVE SRCE,DEST
INC SRCE
INC DEST
MOVE SRCF,DEST
INC SRCE
INC DEST
MOVE SRCE,DEST
INC SRCE
INC DEST
etc
```

This is repeated the number of times necessary to copy a line. On the 68000 this is especially useful since auto increment and long words can be used for the transfer. On the 8080 and Z80, a clever trick called the reverse push can be used, this takes advantage of the fact that the stack pointer on these processors is 16 bits and can be made to point to any section of memory. The trick is that the stack pointer is automatically decremented after each push onto the stack so fewer decrements are necessary. On the Z80, the LDDR and LDIR instructions are also available giving a little more flexibility. The 6502 unfortunately comes out worst in that the reverse push would be constrained to the page 1 area ($100–$1FF) since the stack pointer is only 8 bits. However, the inclusion of indirect addressing in the instruction set does mean that pointers kept in the zero page can be used for the transfer.

To cut down on copying time, the portion of the screen to be copied can be reduced. Apart from the obvious advantage that the amount of data to be moved is smaller, this has the advantage that sprites don't need to be clipped to stop them wrapping around the screen. A section of the screen that is a border to the scrolled section can be placed over the sprites to make them gradually disappear off the edges.

Putting borders on does increase copying time since the borders must also be updated every time the screen is updated.

On machines that do not allow pixel positioning of the screen ie, Amstrad, ST, Spectrum, it is sometimes possible to get away with moving the screen in much larger chunks 8 pixels or even 16. Persistance of vision, and screen update time, as discussed earlier in these articles, will cover any lapses. For vertical scrolling, pixel position is not usually as vital, since the layout of the screen performs this automatically. Taking the mapping layout used in Fig 1, all that need be done is move the start pointer up a whole line and make sure the graphics in memory are available.

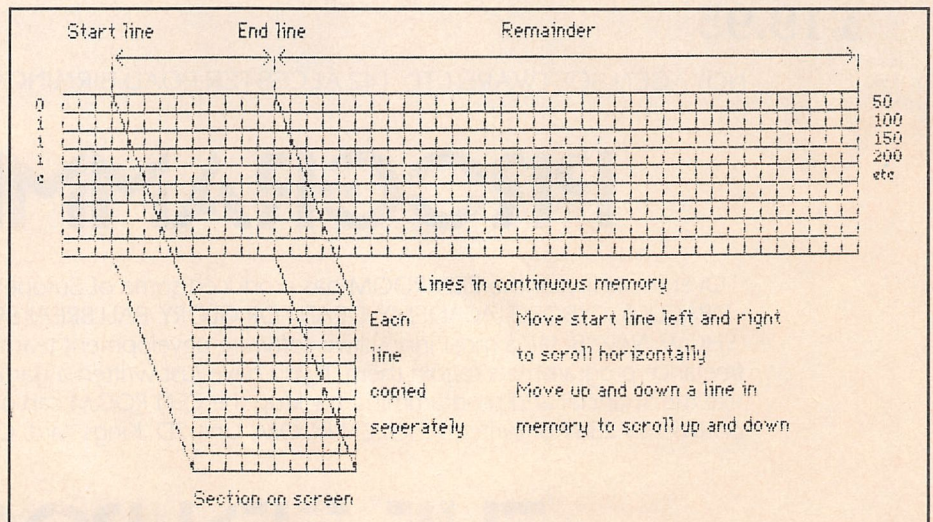

Fig 1 - scrolling around a section of memory

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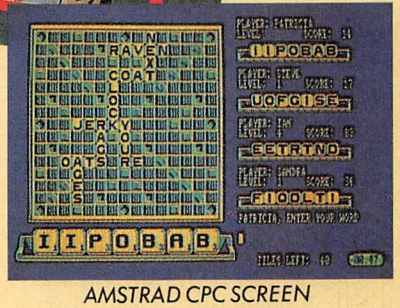

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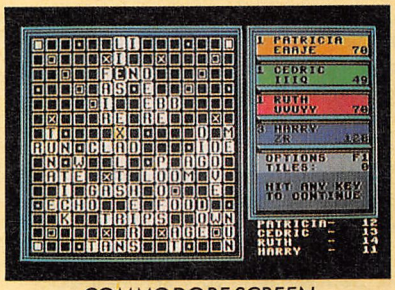

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'Super' pulsations

Mark Jenkins with more music software for the Commodore 64 . . .

After last week's look at the PCW show, where ninety percent of the music products on display were for the Atari ST, it is refreshing to get back to our look at the Sonus range for the Commodore 64.

Of course, Sonus do have a sequencer package for the ST as well – it's called *Masterpiece* – and the Commodore does need a MIDI interface to use these packages.

Since you can get hold of a Datel interface for around £29.95, the total cost is still pretty reasonable.

Sonus have been working on C64 software for a couple of years now, and have just set up a UK office.

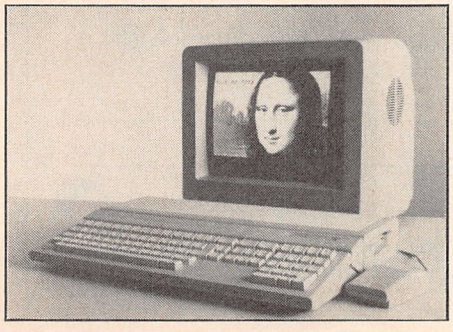
Some weeks back we looked at *Glasstracks,* their budget sequencer, and this time it's *Super Sequencer 64,* their top-of-the-line Commodore package.

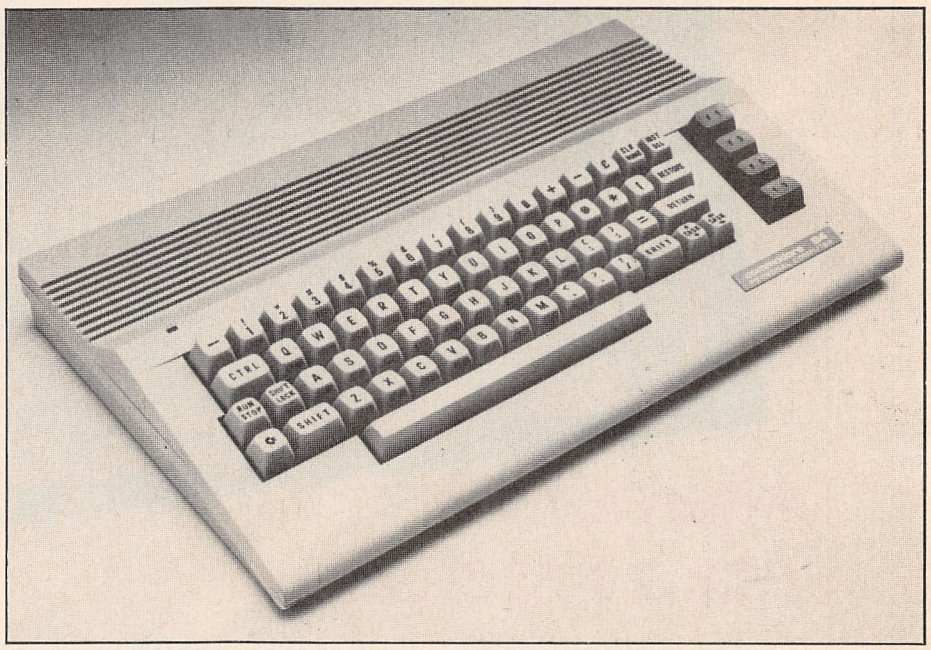
Also included in the range are the *MIDI-Tech System Exclusive Librarian* (£60), the *Sonic Editor* (£60), a graphic editing package for the Mirage and Prophet 2000 samplers, the basic *Glasstracks* sequencer (£47), the RX drum machine *Librarian* (£30), the *Double Banked Librarian/Programmer* (£60) for the Yamaha DX7/TX7, and *Score Track* (£100), a composer package with a full musical display.

Super Sequencer costs £99 and consists of a single disk, handbook and reference card for "hidden" functions.

The package is also available in a C128 version which can run in "2MHz Turbo Mode" for certain functions – this causes the screen to go blank but makes several processes such as track merging much faster.

Super Sequencer is very similar in operation to *Glasstracks* but has many more functions.





The Commodore 64

The opening screen allows you to set Pulse Per Quarter Note (PPQN) rates of 24, 48 or 96 for synchronisation to older drum machines and sequencers; you can also synchronise Super Sequencer to MIDI drum machines as master or slave, or to tape if your interface is sutiably equipped.

The main page (of only two used) has a menu at the bottom of the screen offering Edit Sequence, Edit Track, Song and Disk options.

These are selected by the F1/3/5/7 keys, while hitting Control takes you to another set of options and hitting Shift/Control gives yet a third.

The same multiple menu system applies throughout most of *Super Sequencer* – it takes a while to get into, but is quite fast to use once you are comfortable with the package.

Super Sequencer allows you to record up to 16 different sequences of eight tracks (MIDI channels) each.

In fact you can have more than eight different things going on at once, since it is possible to bounce tracks together; it is just that some passages will have to share a MIDI channel.

On a splittable synth such as the Yamaha DX21, this means that you could record a left-hand "bass guitar" line and a right-hand "flute" line on just one *Super Sequencer* track using one MIDI channel.

On the cheaper *Glasstracks* package, you can only compose a single Song up to 16 sequences long, which is a bit limiting. On *Super Sequencer* you can compose four

It's time ". . . to get back to a look at the Sonus range for the Commodore 64 . . . with *Super Sequencer 64,* the top-of-the-line Commodore package"

songs (collectively known as a "Set") each of up to 24 sequences long. In addition, each sequence in a Song can have a different set of Mutes applied to it, so the same sequence can do different things in different parts of the composition.

However, the four Songs only have the same 16 sequences in memory to call upon, which makes it difficult to see how you can hold a really interesting complete performance in memory.

It is, of course, easy enough to load a completely new Song from disk. The main sequence display of *Super Sequencer* shows tracks 1–8 with a three-character name each, a velocity value, and a MIDI channel. To record a track, just use the "Tape Transport" controls, which are operated by the "/" key and Space Bar.

The package produces a metronome click for you to play along with (you can amplify this through a mixing desk using the appropriate output pin on the rear of the C64) and you can select any MIDI channel using the Software Through facility to control any synth module which you may have connected.

Current position is indicated by a Counter with bar, beat and pulse displays, and there's also an Auto Punch-In counter which allows *Super Sequencer* to drop into Record mode at any point. If you want to make a correction to a piece which requires both your hands to be concerned with the music keyboard rather than the computer keyboard, this is rather handy!

Memory Remaining from 1–99 is indicated, constantly, and by selecting Step Mode you can record patterns one beat at a time (with variable beat length) for very precise playback.

It is also possible, as on most sequencer packages, to Auto-Correct your playing to various degrees of exactness, although it is always wise to carry out this process on a track copied from the original performance, since some data may be lost if you overdo the auto-correction.

Unlike some other packages, *Super Sequencer* allows you to alter both the start and the end points of a sequence, which is handy if you suddenly change your mind about how your song should start.

It is also possible to remove several possibly unwanted factors – patch changes, after-touch data (which can eat up vast amounts of memory), pitch bends and so on. The tempo of each sequence can be memories and you can transpose a sequence to any desired degree after recording.

Tracks and Sequences can be edited in various other ways including time shifting, appending and merging, and a completed sequence can be saved with an eight-letter name.

When you want to compose a song from the individual Sequences, just go to the Song page, which offers a very simple block into which you can enter 24 sequence names.

As mentioned before, mutes can be entered for each appearance of each sequence, and it is also possible to Transpose the entire song.

You can edit your song list quite easily, inserting new sequences where desired, and of course save the whole thing to disk. In fact you can save up to four songs as a Set, which lives on a disk along with the 16 sequences and any System Exclusive data you need. It's quite significant that *Super Sequencer* can be used as a recorder for System Exclusive data.

The Sys. Ex. functions wipe out any memory used for sequences, so you need to save current work to disk first.

But the ability to store patches, sample data and drum patterns (from any instrument which is capable of sending them in MIDI System Exclusive form) is very valuable; you can store your song, your drum pattern, and all the sounds needed to re-create the song, on one Super Sequencer disk.

"It is not too expensive, relatively speaking, and is pretty easy to use, with everything on the screen clearly labelled"

Super Sequencer also has an unusual feature called Seam Manager. Many sequencer packages terminate playback a couple of beats before the end of the last bar in order to send All Notes Off and other housekeeping commands.

Seam Manager will allow you to use this process selectively, so if the ends of your sequences are getting ragged due to this sort of housekeeping, you can switch it out.

The package is also equipped with eight Counter Memory locations which are called up using the Track display (simply because this happens to be conveniently labelled from 1–8 already).

This means that you can find your way about a very long piece quite easily. *Super Sequencer* certainly has the ability to create very long and complex pieces of music, although it is still a bit under-powered in this respect compared to C-Lab Supertrack or the latest version of Steinberg Pro-16.

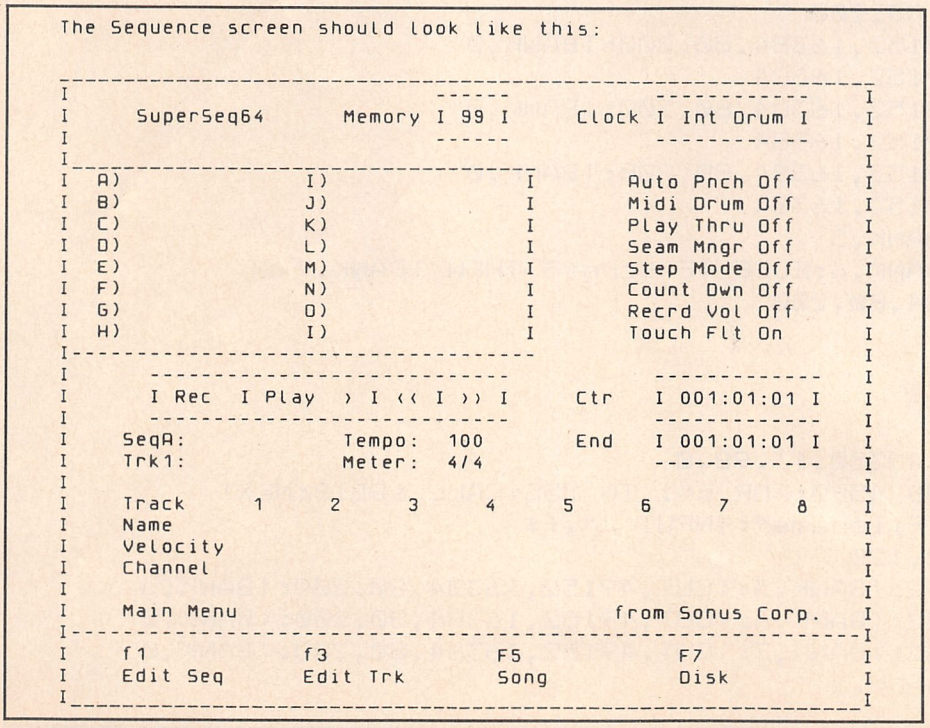
The *Steinberg* package (which is admittedly more expensive than *Super Sequencer*) now offers a superb Step Editing page as well as many advanced functions and a very colourful display,. whereas the *Super Sequencer* display is pretty straightforwardly functional.

If you do want advanced editing for *Super Sequencer* files, the optional MIDI Processor package at £60 provides control over Channel Assign, Track Assign, Transpose, Velocity, Auto Correct, Patch Change, Pitch Wheel, Modulation, Aftertouch, Sustain, Volume, Channel Information Extraction (un-bouncing) and individual MIDI event editing.

However, *Super Sequencer* on its own will turn out some very complex compositions on even a small MIDI system if you so desire. It is not too expensive relatively speaking, and is pretty easy to use, with everything on the screen clearly labelled.

The same cannot be said for the computer keyboard, of course – but perhaps Sonus could consider supplying a set of stickers or an overlay which will help you memorise the 80-odd command functions which go towards making Super Sequencer tick.

Sonus UK, PO Box 18, Wokingham, Berks RG11 4BP, 0734 792699.



Newsmaker

Simon T Goodwin

So, finally we come to the end of Simon Goodwin's desktop publishing program.

Don't forget that you can get a copy of the disc, with examples, for £7.00 from 41 Fountains Drive, Acklam, Middlesbrough, Cleveland TS5 7LW.

```
2820 WINDOW 1,80,1,25:RETURN
2830 :
2840 |FWINDOW,55494,13,98,0
2850 PLOT 305,360:GOSUB 4590:FOR n=1 TO 255:CALL &BB1B:NEXT
2860 |UPRINT,320,354,"Filename":INPUT "",f$
2870 |LOAD, f$,pas-2:sd=PEEK(pas-2):se=PEEK(pas-1)
2880 |PASTE,49152+160+38,z,20,120
2890 RETURN
2900 :
2910 :
2920 |FWINDOW,55494,13,98,0
2930 PLOT 305,360:GOSUB 4590:FOR n=1 TO 255:CALL &BB1B:NEXT
2940 |UPRINT,320,354,"Filename":INPUT "",f$
2950 |PASTE,49350,z,20,120
2960 POKE pas-2,sd:POKE pas-1,se
2970 SAVE f$,b,pas-2,(sd*se)+10
2980 RETURN
2990 :
3000 :
3010 |BANK,0:|FWINDOW,49350,13,98,0
3020 PLOT 305,360:GOSUB 4590:FOR n=1 TO 255:CALL &BB1B:NEXT
3030 |UPRINT,320,354,"Filename":INPUT "",f$
3040 |PASTE,49350,z,20,120
3050 IF scrn=1 THEN |BANK,5:
3060 IF scrn=2 THEN |BANK,6
3070 IF scrn=3 THEN |BANK,7
3080 |CUT,49152,16384,80,200
3090 |BANK,5:|PASTE,49152,16384,80,200:|BANK,0
3100 SAVE f$+".1",b,49152,16384
3110 |BANK,6:|PASTE,49152,16384,80,200:|BANK,0
3120 SAVE f$+".2",b,49152,16384
3130 |BANK,7:|PASTE,49152,16384,80,200:|BANK,0
3140 SAVE f$+".3",b,49152,16384
3150 IF scrn=1 THEN |BANK,5
3160 IF scrn=2 THEN |BANK,6:ELSE IF scrn=3 THEN |BANK,7
3170 |PASTE,49152,16384,80,200
3180 |BANK,0
3190 RETURN
3200 :
3210 :
3220 |BANK,0:|FWINDOW,49350,13,98,0
3230 PLOT 305,360:GOSUB 4590:FOR n=1 TO 255:CALL &BB1B:NEXT
3240 |UPRINT,320,354,"Filename":INPUT "",f$
3250 |PASTE,49350,z,20,120
3260 LOAD f$+".1",49152:|BANK,5:|CUT,49152,16384,80,200:|BANK,0
3270 LOAD f$+".2",49152:|BANK,6:|CUT,49152,16384,80,200:|BANK,0
3280 LOAD f$+".3",49152:|BANK,7:|CUT,49152,16384,80,200:|BANK,0
3290 IF scrn=1 THEN |BANK,5
```

```
3300 IF scrn=2 THEN |BANK,6:ELSE IF scrn=3 THEN |BANK,7
3310 |PASTE,49152,16384,80,200:|BANK,0
3320 RETURN
3330 :
3340 :
3350 RETURN
3360 :
3370 :
3380 |FWINDOW,49350,13,98,0
3390 PLOT 305,360:GOSUB 4590:FOR n=1 TO 255:CALL &BB1B:NEXT
3400 |UPRINT,320,354,"Filename":INPUT "",f$
3410 |PASTE,49350,z,20,120
3420 LOAD f$,49152
3430 RETURN
3440 :
3450 :
3460 |CUT,49152+160+50,z,20,100
3470 |FWINDOW,49363,13,50,0
3480 PLOT 405,360:GOSUB 4580
3490 RESTORE 4700:|UPRINT,420,354,"Print"
3500 TAG:FOR n=1 TO 3:READ a$:MOVE 420,344-(n*16):PRINT a$;:NEXT:TAGOFF
3510 a%=0:|MENU,3,0,0,1,1,420,328,@a%
3520 |PASTE,49152+160+50,z,20,70
3530 ON a% GOSUB 3570,3710,3720
3540 RETURN
3550 :
3560 :
3570 IF scrn=1 THEN |BANK,5
3580 IF scrn=2 THEN |BANK,6:ELSE IF scrn=3 THEN |BANK,7
3590 |CUT,49152,16384,80,200
3600 |BANK,5:|PASTE,49152,16384,80,200:pixel=362:GOSUB 3750
3610 |BANK,6:|PASTE,49152,16384,80,200:pixel=362:GOSUB 3750
3620 |BANK,7:|PASTE,49152,16384,80,200:pixel=362:GOSUB 3750
3630 IF scrn=1 THEN |BANK,5
3640 IF scrn=2 THEN |BANK,6
3650 IF scrn=3 THEN |BANK,7
3660 |PASTE,49152,16384,80,200
3670 |BANK,0
3680 RETURN
3690 :
3700 :
3710 pixel=398:GOSUB 3750:RETURN
3720 RETURN
3730 :
3740 :
3750 WIDTH 255
3760 PRINT #8,CHR$(27);CHR$(85);CHR$(1);
3770 PRINT #8,CHR$(27);"3";CHR$(6);
3780 FOR lin=pixel TO 0 STEP -4
3790 posi=0
3800 FOR tt=1 TO 2
3810 PRINT #8,CHR$(27);"L";CHR$(64);CHR$(1);
3820 FOR col=posi TO posi+319 STEP 1
3830 FOR a=0 TO 6 STEP 2
3840 byte=byte+(TEST(col,lin-a)>0)*-b(a)
3850 NEXT
3860 PRINT #8,CHR$(byte);
3870 byte=0
3880 NEXT
```

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```
3890 posi=posi+320
3900 NEXT
3910 PRINT #8,CHR$(27);"3";CHR$(6);:PRINT #8
3920 NEXT
3930 RETURN
3940 :
3950 :
3960 |CUT,49152+160+62,z,20,100
3970 |FWINDOW,55519,13,50,0
3980 PLOT 505,360:GOSUB 4580
3990 RESTORE 4710:|UPRINT,520,354,"Miscellany"
4000 TAG:FOR n=1 TO 3:READ a$:MOVE 520,344-(n*16):PRINT a$;:NEXT:TAGOFF
4010 a%=0:|MENU,3,0,0,1,1,520,328,@a%
4020 ex=0:ON a% GOSUB 4060,4280,4360:IF ex=0 THEN |PASTE,49152+160+62,z,
20,100
4030 RETURN
4040 :
4050 :
4060 |PASTE,49152+160+62,z,20,70:|CUT,49152+160+38,z,35,100
4070 |FWINDOW,49152+160+38,35,100,0
4080 PLOT 305,360:GOSUB 4620
4090 WINDOW 41,64,4,11
4100 PRINT "You are now using screen ";scrn
4110 FOR n=1 TO 255:CALL &BB1B:NEXT
4120 INPUT "Which screen would you  like to switch to";s
4130 IF s<1 OR s>3 THEN 4120
4140 WINDOW 1,80,1,25
4150 |PASTE,49152+160+38,z,35,100
4160 IF scrn=1 THEN |BANK,5:
4170 IF scrn=2 THEN |BANK,6
4180 IF scrn=3 THEN |BANK,7
4190 |CUT,49152,16384,80,200:scrn=s
4200 IF scrn=1 THEN |BANK,5
4210 IF scrn=2 THEN |BANK,6
4220 IF scrn=3 THEN |BANK,7
4230 |PASTE,49152,16384,80,200
4240 |BANK,0
4250 ex=1:RETURN
4260 :
4270 :
4280 |FWINDOW,55519,13,62,0:PLOT 505,360:GOSUB 4580
4290 WINDOW 65,75,4,8
4300 PRINT "NEWSMAKER";
4310 PRINT "(c) STG":PRINT "Version 1.0";:PRINT "August 87":PRINT "Enjoy
 it!"
4320 FOR n=1 TO 255:CALL &BB1B:NEXT
4330 WHILE INKEY$="":WEND:WINDOW 1,80,1,25:RETURN
4340 :
4350 :
4360 RETURN
4370 :
4380 :
4390 PRINT CHR$(23);CHR$(1);:TAG
4400 GOSUB 4530
4410 IF INKEY(1)=0 AND X<636 THEN GOSUB 4530:x=x+1+dra:GOSUB 4530
4420 IF INKEY(8)=0 AND X>-8 THEN GOSUB 4530:x=x-1-dra:GOSUB 4530
4430 IF INKEY(0)=0 AND Y<368 THEN GOSUB 4530:y=y+2+dra+dra:GOSUB 4530
```

```
4440 IF INKEY(2)=0 AND Y>4 THEN GOSUB 4530:y=y-2-dra-dra:GOSUB 4530
4450 IF INKEY(79)=0 THEN  4470
4460 IF INKEY(9)<>0 THEN GOTO 4410
4470 x%=x:y%=y
4480 GOSUB 4530
4490 TAGOFF:PRINT CHR$(23);CHR$(0);
4500 RETURN
4510 :
4520 :
4530 PLOT -5,-5,1:MOVE x,y:PRINT "+";
4540 IF dra=1 THEN PLOT linx1,liny1:DRAW x+4,y-6:RETURN
4550 RETURN
4560 :
4570 :
4580 DRAWR 100,0:DRAWR 0,-100:DRAWR 1,0:DRAWR 0,100:DRAWR 1,0:DRAWR 0,-1
00:DRAWR 1,0:DRAWR 0,100:DRAWR 0,-100:DRAWR -102,0:DRAWR 0,-
1:DRAWR 102,0:DRAWR 0,-1:DRAWR -102,0:DRAWR 0,101:RETURN
4590 DRAWR 100,0:DRAWR 0,-180:DRAWR 1,0:DRAWR 0,180:DRAWR 1,0:DRAWR 0,-1
80:DRAWR -102,0:DRAWR 0,-1:DRAWR 102,0:DRAWR -102,0:DRAWR 0,
181:RETURN
4600 DRAWR 316,0:DRAWR 0,-100:DRAWR 1,0:DRAWR 0,100:DRAWR 1,0:DRAWR 0,-1
00:DRAWR 1,0:DRAWR 0,100:DRAWR 0,-100:DRAWR -318,0:DRAWR 0,-
1:DRAWR 318,0:DRAWR 0,-1:DRAWR -318,0:DRAWR 0,101:RETURN
4610 DRAWR 300,0:DRAWR 0,-100:DRAWR 1,0:DRAWR 0,100:DRAWR 1,0:DRAWR 0,-1
00:DRAWR 1,0:DRAWR 0,100:DRAWR 0,-100:DRAWR -302,0:DRAWR 0,-
1:DRAWR 302,0:DRAWR 0,-1:DRAWR -302,0:DRAWR 0,101:RETURN
4620 DRAWR 240,0:DRAWR 0,-180:DRAWR 1,0:DRAWR 0,180:DRAWR 1,0:DRAWR 0,-1
80:DRAWR 1,0:DRAWR 0,180:DRAWR 0,-180:DRAWR -240,0:DRAWR 0,-
1:DRAWR 240,0:DRAWR 0,-1:DRAWR -240,0:DRAWR 0,181:RETURN
4630 :
4640 :
4650 DATA Text,Graphics,Banner,Files,Print,Miscellany
4660 DATA Load file ,Enter text,Exit
4670 DATA Dot mode,Line mode,Fill,Spray,Cut,Paste,Exit
4680 DATA Emphasize ,Underline ,Double-H  ,Exit
4690 DATA Load block,Save block,Load page,Save page,Load scr,Exit
4700 DATA Whole page,Screen,Exit
4710 DATA Move,Version,exit
4720 eror=1:SOUND 1,100:RESUME NEXT
4730 GOTO 240
```


Memory Monitor

D Marsh

You've seen them on other computers before, so now here's a memory manipulation program for your QL. The listing will be split over two weeks so half the commands are listed below, the rest following in a week's time.

(A)DDRESS assigns a start address in memory for data entry.

(R)ESPR reserves data space and assigns a start address for data statement entry.

(T)YPE switches between decimal and hexadecimal data.

(P)OKE for entering data into memory.

(V)IEW for examining any area of memory.

(S)BYTES saves data on microdrive one.

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```
1 REMark MEMORY MONITOR - D. MARSH 1987
2 :
3 REMark Change control codes to suit printer where indicated
4 REMark Program setup for Tandy DMP 105 printer at the moment
5 :
6 INIT:SETUP:CHOOSE
7 :
8 DEFine PROCedure INIT : REMark Change BAUD to suit printer
9 TYPE$="DEC":START=163840:MEM=START:TYPE$="DEC":AREA=0:BAUD 2400
10 END DEFine
11 :
12 DEFine PROCedure SETUP
13 MODE 4:WINDOW 512,256,0,0:PAPER 4,7,3:CLS
14 BLOCK 448,230,36,15,0:WINDOW 448,230,31,18:PAPER 0,7,3:CLS
15 WINDOW 214,30,36,23:PAPER 2:CLS:BORDER 1,0:CSIZE 3,1:INK 7
16 PRINT " QL MONITOR":WINDOW 218,17,254,23:PAPER 7:CLS:BORDER 1,0
17 CSIZE 0,0:INK 2:PRINT "   LOCATION      CONTENT      ASCII"
18 WINDOW 214,80,36,56:PAPER 4:CLS:BORDER 1,0:INK 0
19 PRINT\"  (A)DDRESS  (D)ELETE  (L)BYTES"
20 PRINT "  (I)NSERT   (R)ESPR   (S)BYTES"
21 PRINT "  (P)OKE     (H)ARD    (V)IEW"
22 PRINT "  (K)ILL     (T)YPE    (G)EN"
23 PRINT "  (Q)UIT     (Z)AP"
24 WINDOW 218,200,254,43:PAPER 7:CLS:BORDER 1,0:INK 0
25 OPEN#3,CON_214x80a36x139:PAPER#3,7:CLS#3:BORDER#3,1,0:INK#3,0
26 OPEN#4,SCR_134x20a36X223:PAPER#4,4:CLS#4:BORDER#4,1,0:INK#4,0
27 OPEN#5,SCR_77x20a173x223:PAPER#5,4:CLS#5:BORDER#5,1,0:INK#5,0
28 LOCATION START:TYPE
29 END DEFine
30 :
31 DEFine PROCedure LOCATION(M)
32 IF TYPE$="HEX":M$=HEX$(M):ELSE M$=M
33 CLS#4:PRINT#4," LOCATION="!M$
34 END DEFine
35 :
36 DEFine PROCedure TYPE
37 CLS#5:PRINT#5," TYPE="!TYPE$
38 END DEFine
39 :
40 DEFine FuNction CONVERT(A$)
41 IF TYPE$="HEX":A=DEC(A$):ELSE A=A$
42 RETurn A
43 END DEFine
44 :
45 DEFine PROCedure CHOOSE
46 POKE 163976,1
47 REPeat SCAN
48 GETKEY:SELect ON K
49 =65:ADDRESS:=82:SPACE
50 =84:IF TYPE$="DEC":TYPE$="HEX":TYPE:LOCATION MEM:ELSE TYPE$="DEC":TYPE:L
OCATION MEM
51 =80:POKEDAT:=83:S_BYTES:=76:L_BYTES:=86:VIEW:=75:KILL
52 =90:ZAP:=68:DEL:=73:INSERT:=71:GENERATE:=81:QUIT:=72:HARD
53 END SELect
54 END REPeat SCAN
55 END DEFine
56 :
57 DEFine PROCedure ADDRESS
58 INPUT#3," ENTER START="!START$:IF START$="":CLS#3:RETurn
59 START=CONVERT(START$):IF START>786432:ADDRESS
60 LOCATION START:MEM=START:CLS#3:AREA=0
61 END DEFine
```

```
62 :
63 DEFine PROCedure SPACE
64 INPUT#3," ENTER SPACE="!AREA$:IF AREA$="":CLS#3:RETurn
65 AREA=CONVERT(AREA$):START=RESPR(AREA)
66 LOCATION START:MEM=START:CLS#3
67 END DEFine
68 :
69 DEFine FuNction PLACE(C$)
70 PRINT#3\\" "&C$&" FROM :":INK#3,2:PRINT#3\\" (S)TART     (O)THER"
71 INK#3,0:GETKEY:SELect ON K
72 =83:MEM=START:CLS#3:RETurn 0
73 =79:CLS#3:INPUT#3," ENTER ADDRESS="!MEM$
74 IF MEM$="":CLS#3:RETurn 1
75 MEM=CONVERT(MEM$):IF MEM>786432:GO TO 73
76 CLS#3:RETurn 0
77 END SELect
78 CLS#3:RETurn 1
79 END DEFine
80 :
81 DEFine PROCedure POKEDAT
82 IF PLACE("POKE")=1:RETurn
83 LOCATION MEM:CLS:CLS#3:D=0
84 REPeat DATAIN
85 INPUT#3," DATA (Q TO QUIT)="!D$:IF D$="Q":CLS#3:RETurn
86 IF D$<>"":DAT$=D$
87 IF "." INSTR DAT$:BEEP 3000,1:CLS#3:GO TO 85
88 DAT=CONVERT(DAT$):IF DAT>255:BEEP 3000,1:CLS#3:GO TO 85
89 POKE MEM,DAT:IF TYPE$="HEX":MEM$=HEX$(MEM):ELSE MEM$=MEM
90 PRINT TO 4;MEM$;TO 18;DAT$;TO 29;ASC$(DAT)
91 MEM=MEM+1:LOCATION MEM:CLS#3
92 END REPeat DATAIN
93 END DEFine
94 :
95 DEFine PROCedure VIEW
96 IF PLACE("VIEW")=1:RETurn
97 INK#3,2:PRINT#3\\"      PRESS <SPACE> TO EXIT":INK#3,0:CLS
98 REPeat SHOW
99 DAT=PEEK(MEM)
100 IF TYPE$="HEX":DAT$=HEX$(DAT):MEM$=HEX$(MEM):ELSE :DAT$=DAT:MEM$=MEM
101 PRINT TO 4;MEM$;TO 18;DAT$;TO 29;ASC$(DAT):LOCATION MEM
102 MEM=MEM+1
103 IF CODE(INKEY$)=32:EXIT SHOW
104 END REPeat SHOW
105 CLS#3
106 END DEFine
107 :
108 DEFine PROCedure HARD
109 IF PLACE("HARD COPY")=1:RETurn
110 CLS#3:INPUT#3," ENTER END ADDRESS="!EMEM$:IF EMEM$="":CLS#3:RETurn
111 EMEM=CONVERT(EMEM$):CLS#3
112 IF EMEM<MEM:CLS#3:RETurn
113 INK#3,2:PRINT#3\\"      PRESS <SPACE> TO EXIT":INK#3,0
114 :
115 OPEN#15,SER1 : REMark Change to suit printer
116 :
117 REMark Next line must send a CR+LF and turn condensed print ON
118 :
119 PRINT#15,CHR$(13);CHR$(0);CHR$(27);CHR$(20);CHR$(0);
120 :
121 REPeat DUMP
122 IF TYPE$="HEX":MEM$=HEX$(MEM):ELSE MEM$=MEM
123 PRINT#15,"  (ADDRESS= "&MEM$&")    ";
124 FOR I=1 TO 15
```

Token Generator

Ian Wooff

This program complements the *Multi-Print* program which finished last week. The program allows the Sinclair tokens, codes 165–255, to be redefined to any characters.

The program offers you five options. The first is create a new token. The token code and equivalent Sinclair code along with the token's current length and what it is defined as. You are given a cursor and can enter up to 20 characters made up of numbers, letters, symbols of other tokens. If the token has been redefined the new token will appear upon compilation of the definitions, otherwise the Sinclair token will remain.

The second option, alter a token, allows a token to be altered, to correct errors.

The third option, delete last token, deletes the last token to be defined.

The fourth option compiles the code for *Multi-Print*. After this option any redefined tokens containing other tokens will appear as their correct definitions. This option then gives the option of saving a version of *Multi-Print* which has been modified to enable it to print out the tokens which have been redefined. All tokens which are not redefined appear as the Sinclair token. The new address, to which the machine stack must be lowered to before the code is loaded, is also given.

The last option, examine definitions, allows all the tokens to be examined on the screen or copied to the printer.

Lines 5020–5050 contain commands for the Kempston 'E' printer interface. If you do not have this then leave these lines out.

Type in Listing 1, the token generator, and save it to tape with SAVE"TOKEN GEN." LINE 9500. Then save a copy of *Multi-Print* after it. The token generator will now auto-run and load *Multi-Print* before beginning.

```
  10 RANDOMIZE USR 61741
  20 LET cur=165: DIM l(91): DIM m$(91,2
1)
  30 BORDER 6: PAPER 6: INK 0: CLS
  40 RESTORE 40: FOR g=1 TO 5: READ a,s,
d,f: *BOX a,s,d,f: NEXT g: DATA 0,0,175,
255,2,2,63,251,2,153,20,251,2,86,65,251,
2,67,17,251
 100 *SOUND 0,0,0: *RAM: LET t=2: LET tt
=0: FOR a=1 TO cur-165: LET tt=tt+l(a):
LET t=t+2: NEXT a: LET t=t-(2 AND t=2):
LET a$="TOTAL MEMORY REQUIRED "+STR$ (t+
tt)+" BYTES ": PRINT AT 12,((41-LEN a$)/
2);a$
 110 PRINT AT 14,16; INK 3;"OPTIONS ";AT
 1,13; INK 2;"TOKEN GENERATOR "; INK 0;A
T 16,2;"1:-CREATE A NEW TOKEN ";AT 17,2;
"2:-ALTER A TOKEN ";AT 18,2;"3:-DELETE L
ASE TOKEN ";AT 19,2;"4:-PRODUCE CODE FOR
 MULTI-PRINT ";AT 20,2;"5:-EXAMINE DEFIN
ITIONS "
 200 LET a$=INKEY$: IF a$="" OR a$<"1" O
R a$>"5" THEN  GO TO 200
 210 GO TO VAL a$*1000
1000 IF cur=255 THEN  PRINT AT 7,11;" AL
L TOKENS DEFINED "; *NOTE 200,100,10: *P
AUSE 100: GO TO 30
1010 LET d=cur-164: GO SUB 9000
1020 INPUT AT 0,0;">"; LINE a$: IF a$=""
 THEN  GO TO 30
1030 IF LEN a$>20 THEN  GO TO 1020
1040 FOR a=1 TO LEN a$: IF CODE a$(a)<>c
ur THEN  NEXT a: GO TO 1060
1050 GO SUB 9010: PRINT AT 12,5;"TOKEN D
EFINED IN TERMS OF ITSELF "; *NOTE 200,1
00,10: *PAUSE 50: GO TO 30
1060 LET l(d)=LEN a$: LET m$(d)=a$: LET
cur=cur+1: GO SUB 9000: PAUSE 20: GO TO
30
2000 INPUT AT 0,0;"ENTER CODE>"; LINE a$
: IF a$="" THEN  GO TO 30
2010 IF VAL a$<165 OR VAL a$>255 OR VAL
a$>=cur THEN  GO TO 30
2020 LET d=VAL a$-164: GO SUB 9000: LET
cur=cur-1: GO TO 1020
3000 GO SUB 9010: IF cur=165 THEN  PRINT
 AT 12,9;"NO TOKENS LEFT TO DELETE ": *P
AUSE 100: GO TO 30
3010 LET cur=cur-1: LET d=cur-164: LET l
(d)=0: LET m$(d)="": PRINT AT 12,10;"LAS
T TOKEN DELEATED "; *PAUSE 50: GO TO 30
4000 GO SUB 9010: PRINT AT 12,13;"PRODUC
ING CODE "
4020 LET f=61741-(t+tt): LET d=61741-tt:
 *DPOKE f,d: *DPOKE 64195,f: PRINT 64197
,cur: LET f=f+2
4030 FOR a=1 TO cur-165: FOR s=1 TO l(a)
: POKE d,CODE m$(a,s): LET d=d+1: NEXT s
: *DPOKE f,d: LET f=f+2: NEXT a
4040 INPUT AT 0,0;"SANE >"; LINE a$: IF
a$="s" AND a$="S" THEN  GO TO 30
4050 GO SUB 9010: PRINT AT 12,2;"BEFORE
LOADING CODE USE 'CLEAR ";(61740-(tt+t))
;"' ": SAVE "MULTI"CODE 61741-(t+tt),349
8+t+tt: GO TO 30
5000 INPUT AT 0,0;"PRINTER SCREEN >"; LI
NE a$: IF a$<>"p" AND a$<>"P" AND a$<>"s
" AND a$<>"S" THEN  GO TO 5000
5010 IF a$="s" OR a$="S" THEN  FOR a=165
 TO cur-1: LET d=a-164: GO SUB 9000: PAU
SE 0: NEXT a: GO TO 30
5020 COPY : REM /1
5030 COPY : REM CHR$ 0
5040 LPRINT CHR$ 15;CHR$ 27;"0";
5050 COPY : REM CHR$ 1
5060 FOR a=165 TO cur-1: LET d=a-164: GO
 SUB 9000: LPRINT CHR$ a;m$(a-164): NEXT
 a: GO TO 30
9000 LET m=64197: LET n=PEEK m: POKE m,1
65: PRINT AT 4,13;"CODE ";d+164;" (";CHR
$ (d+164);")      ": POKE m,n: PRINT AT 7
,1;"TOKEN:";("UNDEFINED " AND NOT l(d));
(m$(d) AND l(d));AT 9,1;"TOKEN LENGTH: "
;l(d);" ": RETURN
9010 PRINT AT 12,1;"
                    ": RETURN
9500 CLEAR 59000: LOAD ""CODE : RUN
```

Reset Message

Andrew Oakley

The next time anyone presses Run-Stop/Restore or uses the paperclip on the expansion bus trick, on a Commodore 64 running a program of yours, surprise them with a scrolling message. Once this routine is run, enter your message, up to two lines in length, and after a few seconds all will be ready.

```
5 REM *RESET AND RESTORE MESSAGE BY ANDREW OAKLEY*
10 PRINT"ENTER MESSAGE:":POKE19,10:INPUTM$:
   POKE19,0:X=32768
20 READZ:IFZ>-1ANDZ<256THENPOKEX,Z:X=X+1:GOTO20
30 POKE32800,LEN(M$)+14:FORX=1TOLEN(M$):
   POKE32825+X,ASC(MID$(M$,X,1)):NEXTX
40 DATA16,128,16,128,195,194,205,56,48,67,
   108,246,42,161,32,49,162,0,142,32,208
50 DATA142,33,208,189,44,128,32,210,255,232,
   224,0,208,245,238,32,208,238,33,208
60 DATA24,144,247,144,147,17,17,17,17,17,17,
   17,17,17,-1
```

Ram Disc Erase

S Thompson

This Spectrum 128K/+2 utility will erase the entire Ram disc. This is done by paging in page seven of memory which contains the names and other information of files stored on the Ram disc, and erasing the files one by one.

```
9970 CLEAR 49151
9971 PRINT "Catalogue."
9972 PRINT
9973 CAT /: INPUT "Erase these/";B$:
     IF B$="N" OR B$="N" THEN GO TO 9999
9974 POKE 23388,23
9975 DIM A$(255,10)
9976 LET COUNT=0
9978 LET F=59815
9979 LET COUNT=COUNT+1: FOR N=1 TO 10
9980 IF PEEK (F+1)=0 THEN LET COUNT=COUNT-1:
     GO TO 9984
9981 LET A$(COUNT,N)=CHR$ PEEK (F+N)
9982 NEXT N
9984 IF F>60390 THEN GO TO 9986
9985 LET F=F+20: GO TO 9979
9986 FOR N=1 TO COUNT
9987 ERASE /A$(N,1 TO 10)
9988 NEXT N
9989 PRINT "OK"
9999 STOP
```

Name Change

S Thompson

Using the same idea as in the other program, this Spectrum 128k/+2 routine allows you to quickly and easily change file names on the Ram disc without having to load them in first.

```
9970 CLEAR 49151
9971 PRINT "Catalogue."
9972 PRINT
9973 CAT /
9974 POKE 23388,23
9975 DIM A$(10): DIM B$(10): DIM C$(10)
9976 INPUT "Searching for /";A$()
9977 INPUT "Replacing by  /";B$()
9978 LET F=59815
9979 FOR N=1 TO 10
9980 IF PEEK(F+1)=0 THEN GO TO 9984
9981 LET C$(N)=CHR$ PEEK (F+N)
9982 NEXT N
9983 IF C$=A$ THEN GO TO 9986
9984 IF F>60390 THEN GO TO 9991
9985 LET F=F+20: GO TO 9979
9986 FOR N=1 TO 10
9987 POKE F+N,CODE B$(N)
9988 NEXT N
9989 PRINT "OK"
9990 STOP
9991 PRINT "Not found!/"
```

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Sick, Sick, SICK?

After the hysteria generated by a scandal-mongering Sunday paper over certain elements in *Passengers on the Wind 1*, I imagine that there is sufficient material in *Passengers 2* to create a similar furore. Someone drinking the blood of a dying chicken spurts to mind.

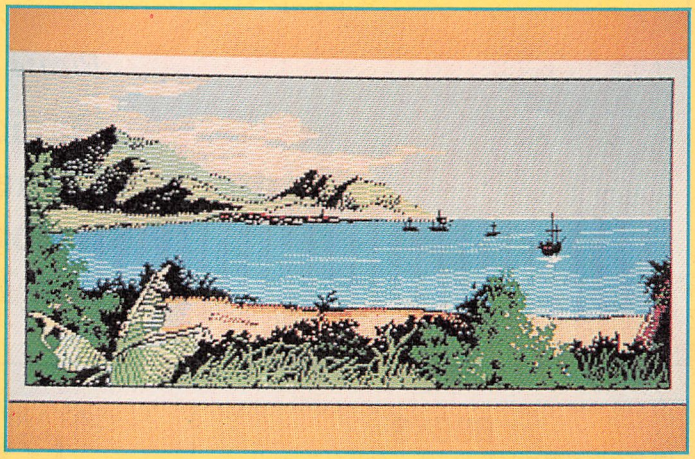
Passengers on the Wind 2 takes the five main characters from the previous adventure, along with fifteen others, to the shores of Africa. Unfortunately things aren't rosy after the escape from England and France. John has gone mad(!), and Hoel has been secretly poisoned by Viaroux, because of a bet he had that he could seduce Hoel's friend, Isa.

While Abbot Forissier corresponds with Saint-Quentin in France about Isa's nobility, which if proved would enable Isa and Hoel to return to France safely, Isa leaves Mary in charge of Hoel and goes off with Viaroux, Montaguere and Captain Doisboeuf to the Kingdom of Dahomey, to see King Kpengla, in the hopes that a cure may be found there (how she arrives at this conclusion is never explained). Confused? You will be.

As the party approaches Abomey, the site of the King's court, you take over the proceedings and attempt to garner help from the ugly bugger without offending him.

The screen is split into three main sections with the general scene taking up the top two thirds. This section contains a panaramic view of the surrounding area, mostly very well drawn. The bottom third is split between a snapshot of the current active character, switching and confirmation bars, and a panel for descriptive text and conversation. Occasionally blow-ups of characters in different poses appear on the main screen to add variety or imply certain feelings that they may have, and there are more interactive elements further on in which you control events on screen more directly.

The game operates by swapping between characters who say or propose to do things, which you may or may not want to confirm. If a character offers more than one opinion you can pick which one to go with, and suffer the consequences thereof. In practice is always seems to be a little harder than that, and trying to stop the characters from dropping you in the frogs legs soup is a real task.



This is in essence, a multiple choice, graphics adventure. So, there are numerous endings besides the happy ones anticipated. Problems arise with this format when the subject of long term playability comes to the fore. The mid and end game situations can retain some freshness for a number of plays but the opening scenes rapidly become tiresome.

There are seven individual episodes all told, so if you haven't got a disc drive, oh dear. Episode two is even shorter than the first. The conversation progresses in the usual confusing manner, Viaroux in a drunken stupor tries to assault Isa and is roundly condemned, there is a brief altercation over a slave girl and then it's back to the disc drive for episode three. And so it continues.

Passengers on the Wind is based on the enormously popular French cartoon series, by Francois Burgeon, which has won numerous awards in its own country, and has been translated very well. Rather too well, I think, to the detriment of the game aspect. A little more attention to gameplay instead of simply on the splendid graphics and style would have been appreciated.

As a side point, the cartoon series is a lot more risque than anything that appears on screen, undoubtedly why WH Smiths refused to stock the hardback book. Still, if you are interested in rather an unusual graphics adventure, then *Passengers on the Wind 2* presents an intriguing, entertaining, and occasionally frustrating, experience. PS, David, you owe me a drink for this.

Duncan Evans

Program *Passengers on the Wind 2* **Type** Graphic Adventure **Machine** ST/PC/C64/Amstrad CPC **Price** £9.95–£24.95 **Supplier** Infogrammes, Mitre House, Abbey Road, Enfield, Middlesex.

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(503)

Your complete guide to all the software released this week

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Amstrad CPC

Program *Professional SKI Simulator* **Type** Arcade **Price** £1.99 **Supplier** Code Masters, Beaumont Business Centre, Banbury, Oxon.

Program *Xevious* **Type** Arcade **Price** £2.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Program *Saracen* **Type** Arcade **Price** £2.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Commodore 64

Program *Nebulus* **Type** Arcade **price** £7.95 **Supplier** Hewson, 56b Milton Trading Estate, Milton, Abingdon, Oxon.

Proving that Hewson are not just a two programmer company, *Nebulus* is yet another fabby game. Programmed by newboy John Phillips, it uses good graphics, and the sort of simple addictiveness that seemed to have disappeared. If you liked Hewsons old stuff, this is a must.

Program *Beach Head II* **Type** Arcade **Price** £2.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

BBC B

Program *"Play it again, Sam"* **Type** Compilation **Price** £9.95 **Supplier** Superior Software Ltd., Regent House, Skinner Lane, Leeds LS7 1AX.

This is the latest compilation from Superior Software, this time consisting of four previous BBC number 1's; *Citadel, Thrust, Stryker's Run,* and *Ravenskull.* If you haven't got all of these games, then this seems like excellent value for money.

Spectrum

Program *Professional SKI Simulator* **Type** Arcade **Price** £1.99 **Supplier** Code Masters, Beaumont Business Centre, Banbury, Oxon.

Program *Fruit Machine Simulator* **Type** Simulation **Price** £1.99 **Supplier** Code Masters, Beaumont Business Centre, Banbury, Oxon.

Program *Beach Head II* **Type** Arcade **Price** £2.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

Another re-release of a sequel etc. Not a bad game at £2.99, although if you don't have the original *Beach Head,* buy that in preference.

Program *Saracen* **Type** Arcade **Price** £2.99 **Supplier** Mastertronic, 8-10 Paul Street, London EC2.

CHARTS

Top Twenty

1	(2)	Grand Prix Simulator	Code Masters
2	(1)	Renegade	Imagine
3	(10)	Indiana Jones	US Gold
4	(4)	Joe Blade	Players
5	(3)	Soccer Boss	Alternative
6	(15)	Pro Ski Simulator	Code Masters
7	(6)	International Karate	Endurance
8	(8)	BMX Simulator	Code Masters
9	(–)	Fruit Simulator	Code Masters
10	(7)	Bubble Bobble	Firebird
11	(11)	ATV Simulator	Code Masters
12	(5)	Tai Pan	Ocean
13	(9)	Back To The Future	Firebird
14	(–)	Paperboy	Elite
15	(12)	Super Robin Hood	Code Masters
16	(13)	Dizzy	Code Masters
17	(17)	Micro Rhythm Plus	Firebird
18	(18)	World Class Leaderboard	Access-US Gold
19	(–)	Football Manager	Endurance
20	(–)	Road Runner	US Gold

All figures compiled by Gallup/Computer Trade Weekly

Mastertronic have recently relaunched a new, revitalised Melbourne House, and to be honest it needed a bit of revitalising.

Despite the enormous success of *Exploding Fist* the company never really got to grips with arcade games and their latest release, *Enterprise,* typifies the problem they had. It's not a bad game, but it reminds me of half a dozen similar games without having any distinctive elements to give it a character of its own.

In this case, *Enterprise* is a member of the *Elite*/space trading breed of game in which you play the part of a minor crook hoping to make a fast buck and retire to the *Paradise Planet.* Your income comes from trading in minerals which can be collected on various worlds and then transported to others to be sold for an outrageous profit. This is all legal, but in order to get started you had to steal your ship.

Not unnaturally this causes a few minor complications, and although the universe is a biggish place (with the game boasting 5,000,000,000,000 planets that you can visit) any further untoward activities are likely to attract the attention of the Interplanetary Police.

As in *Elite* the initial sequence involves choosing your destination planet and then attempting to dock – or, in this case, land. And, as in *Elite,* it took me ages to get past this bit as I kept on smashing into mountains on the planet's surface. The instructions on the cassette inlay aren't as clear as they might be, so landing is a matter of trial and error until you've managed to figure out what the various flight controls do.

Assuming that you land safely you then have the opportunity to begin buying and selling. You also have a chance to take out insurance and get repairs done to the ship's systems, though these aren't always completely reliable which can cause problems later on.

Once space borne again you have to deal with the problems of navigating through space, and of encountering Police patrols. There isn't much in the way of combat involved, but you are equipped with booster engines which can damage any nearby space craft, so using these when the police are around should stir things up a bit.

***Enterprise* doesn't have the degree of complexity of *Elite,* though in some ways this might be an advantage. I always found that playing *Elite* demanded so much time and concentration that it was more like revising for an exam than playing a game. But because *Enterprise* is simpler I managed to get to grips with it much quicker. On the other hand this may also mean that it won't hold your attention the way *Elite* does with some people.**

Stephen Dean

Program *Enterprise* **Type** Arcade/strategy **Machine** Spectrum, Amstrad CPC **Price** £7.95 Spectrum cassette, £8.95 Amstrad cassette **Supplier** Melbourne House, 8-10 Paul Street, London EC2A 4JH.

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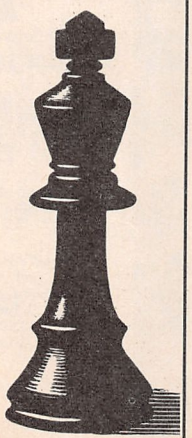

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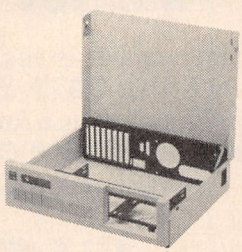

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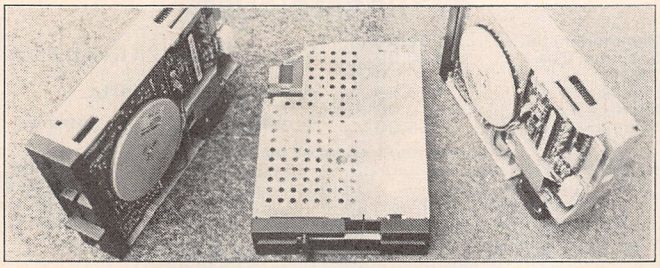

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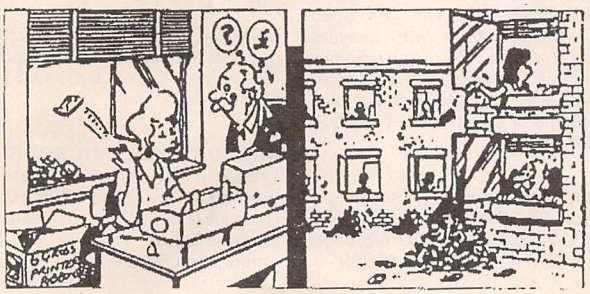

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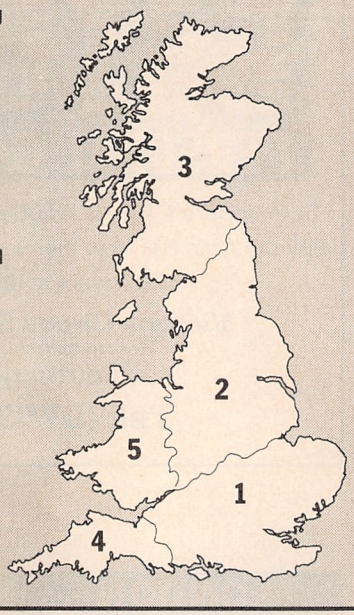

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Never mind the Warlocks . . .

Where have all the Apples gone? As a user, I'm always disappointed to find little mention of the Apple in this and similar publications.

If it comes up at all, you can bet it's the Mac which few of us mere mortals could ever afford.

No, I'm referring to the Apple II family which, admittedly a bit pricey in their day, are now available at good discounted or second-hand prices.

So if you are tired of tinkering with tape and telly and have a yen for discs, 80-column text and actually doing something useful with the computer, why not consider an Apple II?

Of course, if you've got the readies, you can always go for the latest spon-new, supertronic, all-weather Hyperbyter with its tiny, expensive software base alongside its incompatibility with previous models and existing software.

The degree of compatibility between Apple II's, while not total, is pretty impressive. Much software written for the vintage II+ will run cheerfully on the newest addition to the range, the 16-bit IIGS.

The II+, if you can still get one, is limited though it can be expanded. The much smaller IIc, the latest thing three or four years ago, is available at greatly reduced prices.

But if portability is less important than the ability to expand, then a IIe might prove the start of a fruitful relationship.

The IIe is really a greatly-improved version of the II+ and can, with a few additions, equal or exceed the capabilities of the IIc. Cards serving various functions, including extra memory, 80-column display and C/PM are still available for the II+ and IIe, most at more user-friendly prices than in their heyday.

The IIc is a little beauty but will cost a bit more. While it flaunts a mouse, it flouts tradition because, unlike the II+ and IIe, it has no internal slots for additions. It was designed as a closed box to be simply plugged in and run.

Whereas the II+ usually has 48K of ram and the IIe 64K, the IIe weighs in at 128K – not so much hefty as handy. Although they said it couldn't be done (Don't they always?), you can open it up and add a memory card which can give you up to 1000K ram and a Z-80 microprocessor – at a price, of course!

Applesoft is the name of Apple Basic, said to rank among the best. If you can't afford much software, at least you shouldn't have too much trouble creating a little of your own.

All the same, there is a vast array of Apple software at prices ranging from public domain to public scandal. Most is of American origin. That ain't necessarily a bad thing, fellas! (But have a care with spell checking software as Americans can't spell.)

Apple II graphics, while hardly today's leading edge are still good. No zap 'n' blast addict would have to forego his regular injections.

However, if the sum total of your interest and experience is finding yourself something to blow up or wangling your way past some winking warlock, your current gear is doubtless adequate.

If, on the other hand, you feel a need for quality with world-wide support, take a look at a living legend.

Don't look in your local High Street shops, though. Apple products rarely rub shoulders with tacky plastic and budget hi-fi.

Scan the press ads for special offers on the Apple II, sometimes bundled with useful software.

You might even get your hands on the magical AppleWorks integrated software package.

There are plenty of Apple user groups around the country so it shouldn't be difficult to gain access to information, assistance and software.

No need to let your cheap Mickey Mouse set-up bug you any longer, then. Branch out and pick an Apple – indisputably one of the world's most popular and well-supported micros.

L Norris

THE SEARCH CONTINUES . . . since we launched our quest for new puzzle ideas last month, the response from you so far has been – well, underwhelming, to say the least.

There is still £20 waiting for the best idea submitted by a reader, and accepted as the new *Popular Computing Weekly* puzzle, and the closing date for the receipt of entries is November 7, so there's not long to go before your time's up.

Of course, having put it out to you, the readers, it may be that you'd prefer to retain the original puzzle. That is a possibility we are considering, and may well implement.

So it's up to you. You have until November 7th to tell us what you think. So either let us have your ideas for a new kind of puzzle – or let us know if you'd like to see the return of the original puzzle. Either way, we will do our best to arrange what you the readers would most want.

Please let us have your views either way. Write – by November 7th – to: Puzzle Ideas, Popular Computing Weekly, 3rd Floor, Greencoat House, Francis Street, London SW1P 1DG.

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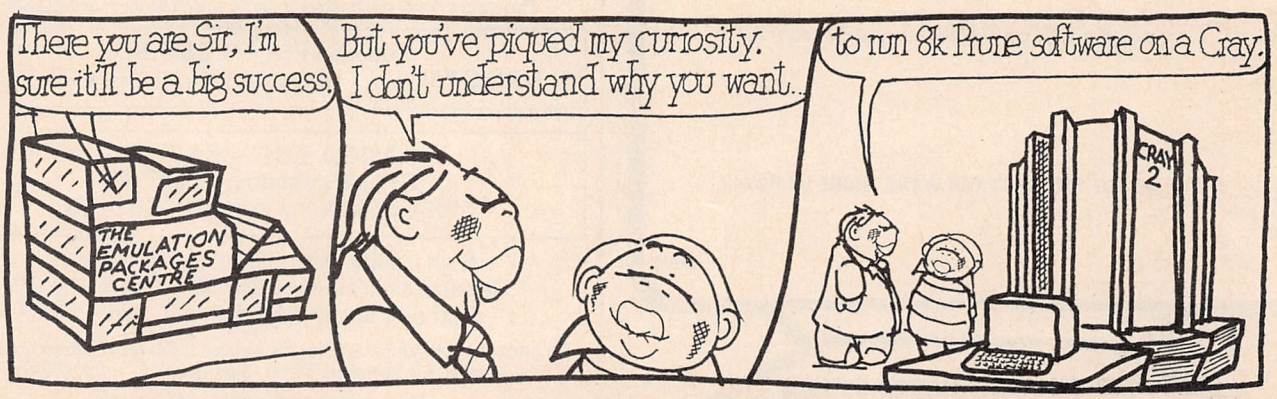

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THE LAST STORM TROOPER

The order of the solar system as kept for thousands of years by the people of Zybor was coming apart. Growing dissatisfaction in outlying planet bodies increased as their technological achievements reached greater heights.

Zybor reacted in the only way left to it whilst the technological advantage remained in its hands. And so Trantor was brought from out of the ranks of the warriors forces where a brutal streak and rebellious nature made sure his talents never realised their full potential. His credentials were perfect his mission was simple, to lead a band of outlaw mercenaries and smash the growing power of the New World NEBULITHONE before its atomic threat turned into an awesome cataclysm of conflict. But the Nebithons were not unprepared and when on return from a reconnaisance scouting, Trantor found the remains of his undercover force scattered amongst the alien landscape along with the last fragments of his battle cruiser, he felt the hate and rage surge through his body and within the ice cold compartment of his mind, he recognised the burden that now lay with him, that all now depended on he – Trantor, the Last Stormtrooper.

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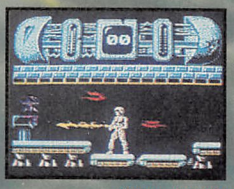
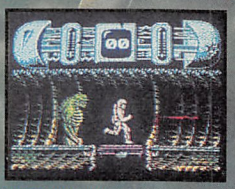
Screen shot from Amstrad version.





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